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Abstracts

(An explanation of the classification used in the Digest was published in the January (1949) issue (Vol. 6, No. 1) on the page facing the Index to Authors)

FIBERS A

Natural fibers A 1

Broom, a new textile. P. G. Bourcier. *J. des Textiles 45*, 21-2 (June 1948). (Through *Bull. de L'Institut Textile*).

Broom fibers have been used in the past, but were abandoned. However, during the last war, their properties were examined again. Broom can be blended with other fibers, such as linen, hemp, or cotton and can be used for working clothes, upholstery, etc. Its color does not present any disadvantages and residual wood, together with sparteine (an alkaloid used as a heart stimulant) are obtained as by-products. Some data on the cost of production are given.

Cotton fiber: Effect of position on seed surface on properties. Sri Nagabhushana. *Indian J. Agri. Sci. 17*, 305-39 (1947). (Through *J. Textile Inst. 40*, A24 (1949).

A previous investigation relating the variation of fiber length, fiber weight, and fiber strength with the position of the cotton fiber on the surface of the seed has been extended to include fiber rigidity, ribbon width and convolutions per inch. The material used and the regions of the seed chosen were the same as before. From the analysis of the experimental results, which are presented in graphs and tables, the following conclusions have been drawn: (i) The fibers on the apical region of the seed possess higher fiber rigidity than those on the basal region, the difference between the mean values for the 2 regions varying from cotton to cotton and ranging from 39% to 183.4%. The frequency distribution of fiber rigidity is asymmetrical for all regions. (ii) The fibers in the apical region have practically the same ribbon width as those in the basal region for 3 of the 6 cottons tested, while for the other 3 the apical fibers are significantly broader. The combed fibers have the maximum ribbon width with the apical, the right and the left flanks, and the basal fibers following in that order. The frequency distribution of ribbon width is practically normal for each region. (iii) The difference in the number of convolutions per mm between fibers from the

apical and the basal regions varies from 14.1% to 43.3%, and is statistically significant in each case. The basal fibers have the highest number of convolution both per fiber and per unit length. While the number of convolutions per mm or their linear density is lowest in the fibers from the flanks and the apex, the total number of convolutions per fiber is lowest in the apical fibers, those from the flanks and the combed fibers coming next in order. The frequency distribution of convolutions is normal for the bulk as well as for the fibers from the different regions of the seed. The variations in the fiber properties within and between the seed regions are attributed to the time lag in the differentiation of neighboring epidermis cells into lint hairs.

Cotton's increasing competition—what should be done to meet it. Robt. B. Evans, Southern Regional Res. Lab. *Textile Bull. 75*, 39-40, 42, 44, 46 (Mar. 1949).

The increase in the use of rayon is attributed to improvements in the properties of the fiber, brought about by extensive research, and to a lowering of prices. To improve cotton's position, mechanization of cotton production should be developed for specific end uses; a great deal more should be known about how well different varieties of cotton contribute to luster, draping qualities, crease resistance, abrasion resistance, etc.; development of scientific tests to provide more even-running lots of cotton; and industry-wide cooperation in support of cotton, particularly in research and marketing help in the promotion of new products.

Electron micrographs of plant fibers. Kurt Muhlethaler. *Biochemica et Biophysica Acta 3*, 15-25 (Feb. 1949).

Cell walls of ramie, cotton, flax, sisal and wood were examined with the electron microscope. The Waring Blendor splits the fibers successfully and yields sections exhibiting an unaltered natural texture. In all these fibers, the cellulose consists of completely individualized micro-fibrils having a thickness of from ca 250-400 A. In primary walls the micro-fibrils are intertwined to form a network, while in secondary walls they have a

common direction and thus are arranged in a more or less parallel manner. Non-cellulose substances, such as lignin, pectin, wax and hemicellulose, are embedded between such fibrils and can be extracted from the cell walls to leave the fibrils undisturbed. Cellulose and non-cellulose each form an independent system.

Investigations of the fibers of certain African nettles. H. Jacques-Felix & H. Babechault. *L'Agronomie Tropicale III*, 339-84 (July-Aug. 1948). (Through *Bull de L'Institut Textile*).

The authors believe that new textile fibers can be produced in Africa from species of plants which have not yet been utilized. They have investigated some of these and give data on the length and diameter of the fibers, their mechanical properties, color, and the yield which may be obtained.

JUTE. H. L. Parsons. Manchester, The Textile Inst. 55 p.; Price: 3s 6d.

This booklet is No. 4 in the series of handbooks of textile technology published by The Textile Institute. It provides a brief history of jute and discusses cultivation, fiber extraction and grading, physical properties, preparation and spinning, yarns, moisture relations, chemical properties and identification and analysis . . . This booklet, which supplements the standard text books upon the spinning and weaving of jute, indicates briefly some technological aspects; for those requiring a deeper insight into its study and subjects of contiguous interest, a bibliography is attached.—*Can. Textile J.*

Roselle—a potentially important plant fiber. J. C. Crane. *Econ. Botany 3*, 89-103 (Jan.-Mar. 1949).

Not yet exploited in the Western Hemisphere, this jute-like African fiber possesses commercial possibilities and is obtained from a plant that furnishes also edible fleshy calyces and oil-containing seeds.

Bast fibers

Apparatus for treating fibrous stalks. John N. Selvig. Can. P. 477 211, Mar. 16, 1948.

A machine for treating fibrous stalks comprises means for feeding stalks through the machine, upper and lower conveyors travelling substantially at right angles to the line of travel of the stalks, a plurality of breaking rolls carried by the conveyors, a plurality of scutching drums carried by the conveyors, means for rotating the breaking rolls on their own axes, and means for rotating the scutching drums on their own axes in the

opposite direction from the direction of rotation of the breaking rolls.

Decomposition of bast fiber plants by water and steam. M. Ludtke. *Melliand Textilber. 29*, 199-202 (June 1948); *in German.*

Literature on the subject is reviewed and the present status of the industry described in the title is discussed. Progress in the treatment of flax is said to be based on the use of green bast instead of straw (by use of new machines for the removal of ligneous matter), possibility of development of improved apparatus, and neutralization of acids by certain recently discovered agents. Decomposition with water does not afford a flocculent bast but produces a long fiber which is generally coarser and firmer than the corresponding retted fiber. The practicability of similar preparation of oil flax straw and other bast fiber plants is considered.

Process for treating plants yielding textile fibers, especially retted linen. Rene Sterkendries, Louis van Oudenhove & Albert Coppe. French P. 931 258, June 10, 1947 (through *Bull. de L'Institut Textile*).

Plants containing bast fibers are treated with cold water containing a substance which liberates nascent oxygen, such as H_2O_2, for 36 hrs. The cold water is then replaced by warm water to give a temperature of 32°C. The fibers can be given more strength and a better color by treating with cold water containing an astringent (citric acid) and by adding a bleaching agent. A detailed example is given in the patent.

Production of spinning fibers from vegetable, especially bast-fiber material. Jacobus Nolten & Zegers. Indian P. 35 651 (through *J. Sci. Ind. Research (India)*).

Wool

Measurements of modulus and damping capacity in torsion and in bending for wool and other textile fibers. J. P. A. Lochner. *J. Textile Inst. 40*, T220-31 (Apr. 1949).

A method is described for the determination of the damping capacity for torsion of fibers. A method for the determination of Young's modulus for bending of short fibers is also described. Young's modulus is calculated in terms of length, diameter, density and fundamental frequency of transverse vibrations when excited to resonance by either an electromagnet or a sound field. The damping capacity of the same fiber is determined from the sharpness of resonance.

Studies on the microbiological degradation of wool. I. Sulfur metabolism. W. H. Stahl, B. McQue, G. R. Mandels & R. G. H. Siu, Gen. Laboratories, Phila. QM Depot. *Arch. Biochem. 20,* 422-32 (Feb. 1949).

The writers have been interested in the biochemical mechanism of degradation of wool by fungi, particularly *Microsporum gypseum.* The present paper attempts to explain what happens when the fungus attacks the sulfur portion of the keratin molecule. While much has been accomplished in explaining the paths of sulfur metabolism in animals no biochemical work on wool and sulfur metabolism of *M. gypseum* has been noted in the literature.

Wool: Action of alkalies. (3) Action of alkalies on deaminated wool. R. Cockburn, B. Drucker & H. Lindley. *Biochem. J. 43,* 438-44 (1948). (Through *J. Textile Inst. 40,* A79 (1949)).

The reaction of the sulfur of deaminated wool with alkalies has been studied. Excluding the cystine destroyed during deamination, the deaminated wool behaves very similarly to untreated wool with mildly alkaline buffers at 100°; in particular lanthionine is formed. With stronger alkalies at room temperature, deaminated wool behaves in an entirely different manner from untreated wool, and no lanthionine is formed. An examination of some of the physical properties of deaminated wool has in general confirmed earlier observations of Speakman. Difficulties in reconciling the physical properties and the present chemical evidence with current views of wool structure are discussed.

Wool grease. E. S. Lower. *Oil & Colour Trades J. 115,* 27-8, 30, 32 (Jan. 7, 1949); 84-6 (Jan. 14, 1949).

Products obtained by the distillation of wool grease are described.

Heat retention property of angora wool and other fibers. H. W. Hohls *Melliand Textilber. 29,* 221-25 (July 1948); *in German.*

Technological data on 89 different angora rabbit pelts are reported and certain laws are derived from them. The heat retention property of a variety of fibers is investigated and it is shown that this can be calculated approximately from the surface area of the fibers.

Story of camel hair. Anon. *Am. Fabrics 9,* 63-6 (1st Quarter 1949).

Modern weaving technique avails itself of the remarkable thermostatic qualities of the camel coat to achieve luxurious warmth-without-weight overcoatings. The construction of camel-hair fabrics and steps in the finishing processes of this popular fabric are described. The importance of the role the camel has played in the development of man's civilization since Biblical days is discussed also.

THE STORY OF SILK. Wm. F. Leggett. New York, Lifetime Editions Inc. 361 p.; Price: $5.00.

This volume, a well-written history of silk, traces the progress of silk and its culture from the earliest ages to reasonably modern times, portraying the vicissitudes through which it has passed ever since it originated as an ancient royal monopoly in Asia, through the times when it was traditionally admired by kings and queens who, by so doing, enriched nations both ancient and modern . . . There is a very full description in the volume of the silk moth and its cocoon, with reference to wild silk moths and the mulberry tree. Notes on silk lace, a glossary and a bibliography are also included.

Artificial fibers A 2

Acrylonitrile polymers. E. I. du Pont de Nemours & Co. Australian P. 131 905, Mar. 25, 1946.

Color is removed from articles of acrylonitrile polymers containing over 85% acrylonitrile which have been obtained by wet spinning, by subjecting them at 50-100°C and in a gel state to treatment with 1-10% hydrogen peroxide solution, or to a hypochlorous acid solution containing 0.05-0.5% available chlorine.

Aftertreatment of viscose rayon. Johannes G. Weeldenburg (to Am. Enka Corp). USP 2 468 530, Apr. 26, 1949.

A method of reducing the swelling value and increasing the water repellency and wet strength of viscose rayon and products formed therefrom comprises the steps of reacting the rayon with an aqueous solution consisting essentially of a preformed monomeric compound of the class consisting of the dimethylol and the mono-methylol derivatives of mono- and di-substituted phenols, respectively, and their salts, formed from the reaction of formaldehyde and a substituted phenol in which at least one, but not more than 2, of the 3 reactive hydrogen atoms in the para position and ortho positions has been substituted by a substituent selected from the class consisting of $-CH_3$ and $-Cl$, removing excess solution, and drying and heating to fix the compound upon the treated rayon. (See also USP 2 458 886, TTD: *6,* 397 & USP 2 468 551 below).

Apparatus for producing staple fibers. Noel J.

Folsom & Silas M. Martin (to Camille Dreyfus). Can. P. 445 930, Dec. 30, 1947.

An apparatus for producing staple fibers from continuous filamentary materials comprises a rotatable member, a channel in said rotatable member having a portion thereof extending radially into the periphery of the rotatable member, a blade insert mounted in the periphery of the rotatable member, the blade insert having a curved surface and an opening in alignment with the radial portion of the channel, and a fixed cutter cooperating with the blade insert to sever the filamentary materials.

Apparatus for the automatic indication of the viscosity or concentration in liquids. Karl T. Källe. USP 2 468 370, Apr. 26, 1949.

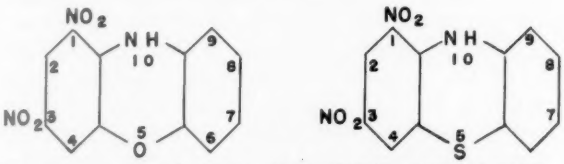
The viscosity of liquids, particularly fiber suspensions, is indicated automatically by means of variations in the speed of rotation of a rotary member driven by turbine power and actuated by a liquid jet having a constant force.

Artificial silk delustering method and composition. Jesse Werner (to Gen. Aniline & Film Corp.). Can. P. 445 478, Dec. 9, 1947.

A process of matting or delustering artificial silk comprises subjecting the artificial silk to the action of an aqueous suspension of a pigment, a water-insoluble free biguanide base containing an alkyl chain of at least 10 C atoms and a wetting agent.

Cellulose ester and ether products colored with a dinitro-phenoxazine or phenthiazine. Henry C. Olpin & Philip B. Law (to Celanese Corp. of Am.). USP 2 464 885, Mar. 22, 1949.

Cellulose acetate and other cellulose ester or ether products, especially textile products, are colored with 1:2-dinitro-phenoxazine or 1:3 dinitro-phenthiazine of the respective formulae:



These compounds have good affinity for the cellulose acetate or other cellulose ester or ether when applied thereto as an aqueous dispersion. The resulting shades are golden orange and golden brown respectively and are non-phototropic and of very good fastness to light. The 1:3-dinitro-phenoxazine is somewhat superior to the 1:3 dinitro-phentiazine both as regards affinity and fastness to light. Its dyeings resist 200 hours exposure to the carbon arc fadeometer.

Decolorizing acrylonitrile polymers. E. I. du Pont de Nemours & Co. Australian P. 131 904, Mar. 25, 1946.

Color is removed from articles of acrylonitrile polymer containing 85% acrylonitrile and having at least one cross-section dimension of the order of 5 mm or less, by treating them in a dry state, with an aqueous solution of hypochlorous acid containing 0.05-1% available chlorine, at 90-150°C and at a pressure sufficient to maintain the treating solution liquid.

Development plant for Vinyon N yarn. R. D. Glenn, J. R. Kernan & J. M. Swalm. *Chem. Eng. Progress 45*, 180-7 (Mar. 1949).

This is a discussion of the plant, equipment, manufacturing steps, and procedures involved in producing Vinyon N fiber.

Films, filaments, fibers and like articles from solutions. Imperial Chemical Industries Ltd. Indian P. 36 523 (through *J. Sci. Ind. Research (India)*).

High-speed traverse. Ivanhoe P. Denyssen (to Am. Viscose Corp.). USP 2 463 604, Mar. 8, 1949.

A high-speed traverse which reverses more rapidly at the end of the stroke effectively manufactures a wound package of more uniform density from end to end in a spinning bucket, or on a bobbin, with the aid of an eccentric member and a correction cam. These are so designed that, when the eccentric member is rotated to a certain position on its scale, the correction cam is rotated to the same on its scale. This relative change in position causes quick reversal at opposite ends of the stroke for any corresponding change in the length of the stroke. Offsets in the cam track also eliminate dwell at the end of each stroke, decreasing the density of the top and the bottom of the cake.

Manufacture of alginate threads. Ronald B. Hall (to Courtaulds Ltd.). Can. P. 445 738, Dec. 23, 1947.

Threads of alkali alginate are produced by projecting an aqueous solution of alkali alginate into a coagulating bath and then treating the thread in the form of helices on a thread-advancing device with other liquids. The coagulating bath and subsequent treating liquids are free from oil, and at least one of them contains about 0.1% of a wetting-out agent chosen from the group consisting of cationic and non-ionogenic wetting-out agents.

Manufacture of artificial fibers. Melvin A. Dietrich (to E. I. du Pont de Nemours & Co.). USP 2 467 196, Apr. 12, 1949.

A process for obtaining improved artificial fibers consists of wet spinning an aqueous solution of a hydrolyzed ethylene-vinyl ester interpolymer into an aqueous solution of monosodium ortho phosphate containing a cationic surface-wetting agent. The resultant fibers have a high tensile strength, a high softening point, and are resistant to organic solvents.

Mechanism for use in spinning artificial filaments. Algemeene Kunstzijde unie N. V. French P. 932 969, Dec. 17, 1947 (through *Bull. de L'Institut Textile*).

A storage and advancing mechanism for handling artificial filaments after they have been spun consists of a rotating cage to which are attached bars surrounded by a system of helicoidal cams. The filament is supported by these cams, the helicoidal form of which causes the advancement of the filament. A system of gears is used to turn the cage and the bars.

Method and apparatus for spinning artificial filamentous products. Robt. J. Taylor (to Am. Viscose Corp.). USP 2 467 541, Apr. 19, 1949.

A method of making artificial filamentous products extruding the spinning material through orifices into a coagulating liquid to form filaments. The filaments are then withdrawn under conditions of turbulence, passed into a second body of liquid, condensed to a web-like sheet while subjecting the filaments to an increase in tension, and collected by winding while in the form of a web-like sheet. The apparatus described is applicable to the spinning of hydrophobic synthetic linear polymers, cellulose acetate, viscose, and the like.

Method and apparatus for threading spinning pots. John K. Whisnant & Luther C. Taylor (to Am. Enka Corp.). USP 2 466 872, Apr. 12, 1949.

In the threading-up of pot spinning machines, the tendency of the rayon yarn to adhere to the godet is overcome by means of a jet of liquid directed on the yarn at the center of the spinning bucket. The weight of the liquid serves to hold the yarn in its proper position in relation to the godet and the spinning bucket. A liquid supply tank situated at an appropriate elevation serves all the jets necessary for one machine. Each nozzle for the ejection of the liquid jet is controlled by a foot-operated valve.

Method for improving the adsorption of carbon disulfide contained in gaseous mixtures incident to the manufacture of rayon. Herman L. Van Nouhuys (to Am. Enka Corp.). USP 2 466 871, Apr. 12, 1949.

A method for improving the adsorption of the carbon disulfide in a carbon disulfide-air mixture comprises lowering the moisture content of the mixture to at least 60% R. H. prior to passage through an adsorbing zone by means of washing the mixture with concentrated sulfuric acid, or by passing it over silica gel, or by cooling the mixture sufficiently to condense the water vapor and restoring the original temperature to effect an R. H. of at least 60%. In the manufacture of viscose rayon employing a spin bath containing sulfuric acid, concentrated sulfuric acid may be used to wash the carbon disulfide-air mixture, and the resulting diluted sulfuric acid used as additions in the acid corrections of the spin bath.

Method of treating casein products. Johannes G. Weeldenburg (to Am. Enka Corp.). USP 2 468 531, Apr. 26, 1949.

A method of reducing the swelling value and increasing the acid resistance and wet strength of casein threads, fabrics and the like comprises reacting the casein products with an aqueous solution consisting essentially of a preformed monomeric compound of the class consisting of the dimethylol and the mono-methylol derivatives of mono- and di-substituted phenols, respectively, and their salts, formed from the reaction of formaldehyde and a substituted phenol in which at least one, but not more than 2, of the 3 reactive hydrogen atoms in the para position and ortho positions has been substituted by a substituent selected from the class consisting of $-CH_3$ and $-Cl$, removing excess solution, and drying and heating to fix the compound upon the treated casein. (See also USP 2 458 886, TTD: *6*, 397 & USP 2 468 530 above)

Polymeric linear terephthalic esters. John R. Whinfield & Jas T. Dickson (to E. I. du Pont de Nemours & Co.). USP 2 465 319, Mar. 22, 1949.

This invention provides a series of highly polymeric linear terephthalic esters composed of recurring structural units of the formula

wherein n represents an integer within the range of 2 to 10, the 3 lowest members of the series having melting points above 200°C; said esters, when formed into filaments, having the character-

istic property of being capable of being cold-drawn to the extent of several hundred per cent of the original length to form fibers of great strength and pliability.

Preparation of peanut protein free from peanut skin pigment. Raymond S. Burnett (to U. S. of Am.). USP 2 463 740, Mar. 8, 1949.

Soluble pigments in peanut skins (testa) can be removed from the peanut kernels by exposing them to dilute acid or alkali solutions for a short period of time. The dilute acid, or alkali, removes the soluble coloring matter in a few seconds, and the excess acid, or alkali, is then rinsed from the peanut kernels by water. A satisfactory basket for holding the kernels during the alkali treatment and rinsing can be made from wire screen of suitable mesh, supported by a framework. Such baskets can be used for batch or continuous processing of the kernels. During this treatment, considerable amounts of water are absorbed by the kernels and may amount to approximately 35 parts for each 100 parts by weight of kernels. This water must be partially removed by drying prior to processing the peanut kernels for separation into oil and meal. The amount of water permitted to remain in the kernels will depend somewhat on the process to be employed for removing the oil but ordinarily, drying to a water content of 10% is satisfactory.

Process for the production of hollow viscose filaments. I. G. Farbenindustrie A. G.: Badische Anilin und Soda-Fabrik. French P. 929 962, July 28, 1947 (through *Bull de L'Institut Textile*).

Hollow viscose filaments are formed from a viscose solution having a salt point of 1.3 and a viscosity of at least 200 sec. at 20°C, as determined by the falling ball method, by injecting an organic liquid (alcohols, ketones, esters, ethers, chlorinated hydrocarbons, etc.) into the center of the spinneret during the spinning process.

Production of high-twist artificial yarn. Lawrence E. Rossiter & Ralph M. Beach (to Natl. Oil Products Co.). Can. P. 447 310, Mar. 16, 1948.

Process for producing pliable, non-snarling high-twist yarn from an artificial fiber yarn comprises distributing throughout the yarn an aqueous emulsion of a hydrogenated oil, drying the yarn, twisting the yarn to a degree such that kinking would normally occur in the subsequent mechanical processing and setting twist in the yarn by means of heat.

Production of variable denier rayon. Gustav A. M. Heim (to Am. Enka Corp.). USP 2 468 666, Apr. 26, 1949.

Rayon yarns having variations in denier occurring at regular intervals are produced by an apparatus in which the cam controlling the variations is driven by the yarn and at a rate correlated with the rate of yarn travel.

Regenerated wool keratin fibers. R. L. Wormell & F. Happey. *Nature 163*, 18 (1949). (Through *J. Textile Inst. 40*, A80 (1949)).

Soluble keratin curd was dissolved in dilute cuprammonium solution, centrifuged and precipitated with sulfuric acid. The curd was then washed in water, redissolved in cuprammonium solution, and, after further centrifuging, the solution was spun, as previously described for casein/keratin mixture into a saturated solution of sodium sulfate (pH=7) containing 0.1% "Fixanol." Finally, the resulting fibers were hardened in a bath of sodium sulfate and formaldehyde, and insolubilized in a solution of sulfuric acid, sodium sulfate and formaldehyde at approximately 50°C. An x-ray photograph shows that the keratin molecule is in the β or fully-extended form, and that there is no evidence of the presence of the typical a-fold of the original wool molecule.

Regenerated wool keratin fibers. E. H. Mercer. *Nature 163*, 18-19 (1949). (Through *J. Textile Inst. 40*, A79 (1949)).

A substantial fraction of wool keratin has been dissolved, using saturated urea solutions containing reducing agents similar to those employed by Lundgren and colleagues. The dissolved protein may be readily salted out of solution. Of the 2 kinds of precipitated protein prepared, one may be drawn into fine fibers with anisotropic physical properties, marked birefringence and yielding the a-type X-ray pattern. Preliminary examination with the ultracentrifuge shows that the dissolved keratin is poly-disperse, but possess a substantially greater molecular weight than the solutions obtained using reducing agents at high pH, such as sodium sulfide.

Spinning device. E. I. du Pont de Nemours & Co. French P. 924 419, Dec. 17, 1947. (Through *Bull. de L'Institut Textile*).

Filaments, ribbons, etc. are produced by spinning molten organic compounds. Fusion and spinning take place in a single apparatus which can be changed or repaired without stopping production of any filament. The process is applicable to the spinning of any long-chain synthetic polyamides, vinyl polymers, polystyrene, and the derivatives of polyacrylic acid.

SPINNING, AFTER-TREATMENT AND AUXILIARY EQUIPMENT FOR STAPLE FIBER VISCOSE RAYON PLANTS IN GERMANY. O. von Kohorn & J. L. Costa. FIAT 937. H. M. Stationery Office. Price: 22s. 6d.

This report (178 pp.) describes, with the aid of numerous photographs and line drawings, the latest types of spinning, after-treatment, cutting, and drying machines in use in the German viscose rayon staple fiber industry. A section on raw material and utility requirements, one on carbon disulfide recovery, and one on continuous crystallizers for sodium sulfate are included. Of the firms visited only one bleached. They used hypochlorite in the usual manner. Finishes, largely based on fatty compounds, are in use, but all the plants visited were looking forward to the time when Soromins and other proved agents would be once more available, experiments with substitutes having revealed nothing of satisfactory performance or of unusual interest.—*Can. Textile J.*

Stabilization of cellulose. Geo. Schneider (to Camille Dreyfus). Can. P. 445 798, Dec. 23, 1947.

A process for the production of cellulose esters of increased stability comprises treating a suspension of a ripened lower aliphatic acid ester of cellulose with an aqueous solution of sulfuric acid containing a wetting agent which is stable in the sulfuric acid solution.

Textile material of subdued luster. Henry C. Olpin & Sydney A. Gibson (to Henry Dreyfus). Can. P. 445 548, Dec. 9, 1947.

This invention provides cellulose acetate fibers having subdued luster due to the presence homogeneously distributed throughout the fibers of a water-insoluble condensation product formed by reaction between formaldehyde and melamine in acid aqueous solution and in amount of from 0.75 to 3% on the weight of the cellulose acetate.

Treatment of yarns. Frank R. Scull (to Celanese Corp. of Am.). USP 2 464 897, Mar. 22, 1949.

Continuous filament yarns, having the appearance of spun yarn made from staple fiber, may be made by subjecting continuous filament yarn to the action of frictional or abrasive means so that the filaments in the yarn are broken at frequent intervals. Upon being twisted the resulting yarn resembles spun fibrous yarn.

Vicara—a new synthetic fiber. Grace R. Wildermuth, Virginia-Carolina Chemical Corp. *Can. Textile J. 66,* 39-41 (Apr. 29, 1949).

This account of Vicara includes discussion of the history of protein fibers, history of Vicara, the manufacturing process, physical and chemical properties, bleaching procedure, dyeing technique, textile processing, and the tow-to-top system.

Wet-spinning acrylonitrile polymers. Weston A. Hare (to E. I. du Pont de Nemours & Co.). USP 2 467 553, Apr. 19, 1949.

Shaped articles, such as yarns, films, bristles, tubings, etc., of acrylonitrile polymers may be formed by a process of wet-spinning. The process comprises extruding a solution, in a volatile organic solvent, of acrylonitrile polymer through a shaped orifice into a spinning bath of an equeous solution of a zinc halide until it is coagulated. The yarn is subjected during its travel through the bath to a tension of at least 0.3 g per denier. The resultant products are claimed to possess a high tenacity, a desirable elongation, a lustrous appearance, and are substantially free of voids.

Yarn drying apparatus. Alvin L. Ewing (to E. I. du Pont de Nemours & Co.). USP 2 465 214, Mar. 22, 1949.

Yarns of artificial fibers may be dried as they are traveling on an advancing reel by an absorbent belt, rotating in one position partially around the reel and in contact with the yarn sheet. As the sheet passes under the belt, excess liquid is absorbed. The liquid-laden belt is moved from contact with the yarn on the reel to adjustable wringers at which point the liquid is removed and from which point the absorbent belt returns to the reel, the belt rotating continually in the same path and the filaments remaining in the same position relative to each other. The absorbent belt holds the individual yarn turns apart and evenly spaced and simultaneously completely breaks the liquid film.

YARN PRODUCTION B

Method and apparatus for spinning cotton and other textile fibers. Marion S. Mayo. USP 2 451 504, Oct. 19, 1948.

A method and apparatus are provided for opening, cleaning, and parallelizing cotton, and other textile fibers, by means of a series of chambers in which the fibers are subjected to jets of air. At the bottom of the apparatus the fibers are delivered through a small opening to a twister for the imparting of twist and collection upon a bobbin.

They toil while others spin. Anon. *Monsanto Mag. 28,* 4-8 (Apr. 1949).

This is an account of the use of Syton at the Talbot Mills, Inc., producers of woolen goods, and the

use of the Stymer at the Manchester Div. of Verney Corp., Manchester, N. H., producers of spun rayon goods.

Truck for transporting bobbins, quills or spools. John C. Paddock. USP 2 468 375, Apr. 26, 1949.

An improved truck for the transportation of bobbins, quills, spools, etc. has a metal slatted bottom which increases the strength of the truck and eliminates the catching of the yarn or filling caused by the splintering of a wooden bottom. Other features of the truck include a cover for the top frame which protects the hands of the operator, rounded ends so that the truck will glance off obstructions, and a body formed of fiber secured to a metal frame.

Fiber preparation B 1

Hard fiber carding machine. Berend G. H. van der Jagt (by change of name Barend G. H. Vanderjagt). USP 2 464 009, Mar. 8, 1949.

The high loss of valuable fibers caused by the high velocity air currents incident to the carding of hard fibers—e.g., jute, cocoanut fibers, sisal, etc. on conventional hard-fiber carding machines, can be almost completely avoided if the lower part of the carding elements is enclosed not with a solid casing having only a few, narrow slots, but with a screen provided with a great number of comparatively uniformly spaced slots parallel to the axis of the carding cylinder, the total area of the slots being sufficient to prevent the air currents produced by the rapidly rotating cylinder from reaching at any of the slots a velocity whereby serviceable fibers are blown out through the slots.

Intermediate feed for carding machines. Wm. G. Tucker. USP 2 451 260, Oct. 12, 1948.

An intermediate feed for carding machinery comprises a suction and blower fan arrangement which sucks the carded staple from the doffer of the first card and discharges it at the feed apron of the second card.

Pneumatic card stripping mechanism. Chas. E. White (to Abingdon Textile Machinery Works). USP 2 464 425, Mar. 15, 1949.

A usual type of a pneumatic card stripper comprises a head having one or more nozzles, usually one nozzle for the main cylinder and one nozzle for the doffer cylinder, connected to a pipe for supplying suction and operated by a traverse mechanism to have a transverse bodily movement while stripping the fiber from the carding machine

cylinder or cylinders. The present invention provides novel simple and effective means in this type of mechanism for automatically closing the valve controlling the supply of suction upon completion of the traversing movement.

Carding and combing B 2

Carding engine with flats moving in opposite directions. Jos. Weber. French P. 931 015, Sept. 15, 1947 (through *Bull. de L'Institut Textile*).

The invention consists in having 2 separate chains of flats running along the surface of the card cylinder. One of the chains moves in the direction opposite to the rotation of the card cylinder, the other moves in the same direction. The first chain retains the impurities and the second continues the carding and cleaning operation. This system has the advantage that the first chain of flats removes waste of a lower quality than the second; it increases the short fibers and decreases the long fibers retained by the flats; the card web is cleaner, and a better quality of yarn is obtained.

Process and apparatus for stripping textile fibers from cards. Augustin Masallera Castell. French P. 931 085, Sept. 15, 1947. (Through *Bull. de L'Institut Textile*).

This method for individual and constant stripping of the main cylinders of cards consists in removing the fibers retained between the wires of the card clothing by means of an electric exhaust fan which moves to and fro across the width of the cylinder. The mouth of this exhauster is placed as near as possible to the card clothing through an opening in the cover of card. The outlet conduit carries the fibers to the front of the feed cylinder. The principal advantages of this method are:—constant cleanliness of the clothing, uniform quality of the web, uniform weight of the sliver, maximum utilization of the material carded, and reduction of the shut-down time of the card for stripping.

Stripping device for cards, especially cotton cards. H. Litolf. French P. 933 058, Dec. 17, 1947. (Through *Bull. de L'Institut Textile*).

This device consists of a stripping roll, turning in the opposite direction to that of the card cylinder at a different circumferential velocity. The clothing of this roll penetrates into that of the card cylinder, taking the layer of cotton to the surface. The cotton then passes above to a suction box, placed before the breaker to entrain impurities. The suction can be regulated. By means of this invention, the clothing of the card cylinder can be

kept constantly in proper condition and yarns produced from the sliver are more uniform.

Drafting and roving B 3

Automatic builder motion knockoff for roving frames. Johnnie J. Seawright. USP 2 452 873, Nov. 2, 1948.

This invention provides a stop motion for Saco-Lowell roving frames such as model D, model J-3 and various other models having like parts, and provides means for stopping a roving frame when the builder motion does not reverse itself due to the collection of lint and other foreign matter at certain parts of the mechanism, and thus prevents breakage of various parts of the machine.

Improvement in mechanism for drawing textile fibers. Casablancas High Draft Co. Ltd. French P. 933 424, Dec. 17, 1947. (Through *Bull. de L'Institut Textile*).

The fibers are passed successively through 3 or more pairs of rolls. The intermediate pair or pairs act as drafting rolls in relation to the preceding pair, and as gripping rolls for the following rolls. In this way, the strip is wound on about one-quarter of the surface of one of the cylinders of each pair of rolls as it leaves them, and passes straight into the constriction formed by the succeeding pair. Drafting is very much improved, especially with thick materials.

Means for applying pressure to drafting rollers of textile machines. Schofield. Indian P. 39 411 (through *J. Sci. Ind. Research (India)*).

Shirley system of high drafting made by Oldham firm. Anon. *Silk & Rayon 23*, 248 (Feb. 1949).

The apron system of high draft which was designed at the Shirley Institute is now being manufactured for industrial use. A diagram and description of the system is presented.

Weight saddles for textile machinery rollers. Walsh. Dobson & Barlow Ltd. Indian P. 39 265 (through *J. Sci. Ind. Research (India)*).

Weighting systems for textile machinery having drafting rollers. Walsh. Dobson & Barlow Ltd. Indian P. 39 263 & Indian P. 39 264 (through *J. Sci. Ind. Research (India)*).

Spinning B 4

Drafting mechanism in spinning or like machines. Casablancas High Draft Co. Indian P. 39 479 (through *J. Sci. Ind. Research (India)*).

Fiber control in worsted spinning. W. Hodgson. *Textile Mercury 120*, 179, 181, 183, 185 (Feb. 4, 1949).

The author discusses the necessity of improved fiber control in worsted spinning for possible elimination of processes and improvements in quality.

Improvement in the means used to apply pressure to the drawing rolls of ring spinning frames or other textile machines. John Schofield, Jr. French P. 926 190, Apr. 14, 1947. (Through *Bull. de L'Institut Textile*).

The pressure applied to drawing rolls is regulated without using weights by means of a crank through a pressure bar pivoted on an extension arm. A pressure lever is also mounted on this arm, and an angular movement is imparted to it to regulate the pressure.

Means for making slub or flake spun yarn from continuous filaments. Chas. E. Neisler, Jr. USP 2 464 882, Mar. 22, 1949.

A sliver or tow of continuous filamentary rayon or other suitable filaments is treated so as to at least partially sever some but not all of the filaments of the sliver or tow at various points in the sliver. The sliver having the partially severed filaments therein is treated in a machine or apparatus which operates to rupture the filaments into staple fibers or lengths suitable for spinning. The rayon staple passes from between a pair of front rolls to the spinning device, said rolls coacting with companion rearwardly spaced rolls to rupture the rayon filaments whereby to form the staple fiber from the filaments. The front rolls of the machine rotate at a substantially greater peripheral surface speed than the back rolls, so that the filaments in the tow are tensioned and ruptured into staple fiber, and as a result of the pre-severing of some but not all of the filaments of the tow or sliver, the yarn spun from the staple fiber is formed with slubs or flakes.

Method in making stretchable yarn. Robt. J. Clarkson (to U. S. Rubber Co.). USP 2 451 919, Oct. 19, 1948.

A method of producing an all textile stretchable yarn having controlled stretch properties includes the steps of drawing a crepe twist yarn about a support so that it bends sharply about the support and then advancing it to a revolving spindle that further twists the yarn and forms successive coils between this spindle and support, then advancing this twisted and coiled yarn a second time and twisting it in the opposite direction to increase

the diameter and decrease the number of the coils to make the yarn easier to stretch.

Mounting for spinning rings and the like. Geo. L. Meyers & John C. Shutt (to The Ohio Rubber Co.). USP 2 454 707, Nov. 23, 1948.

A spinning ring is mounted in a resilient mounting which permits a certain amount of yielding on the part of the ring under operating conditions and which at the same time acts as a dampener to reduce vibration and noise.

Rub apron. Abraham L. Freedlander & Henry M. Bacon (to The Dayton Rubber Co.). Can. P. 445 470, Dec. 9, 1947.

A rub apron comprises a fabric base section, a cord layer superimposed upon the base section, an upper section comprising a vulcanizable compound superimposed upon the cord section, and a strengthening section along either edge of the apron whereby the edge portion of the belt is substantially stronger and less extensible than the portion intermediate the edges thereof.

Spinning cot. Robt. C. Treue (to The Dayton Rubber Co.). Can. P. 445 471, Dec. 9, 1947.

A spinning cot comprises a body of rubber materials with straight glass fibers incorporated therein, the glass fibers being substantially parallelly arranged in the radial direction of said unit.

Spinning ring. Geo. E. Platzer (to Chrysler Corp.). USP 2 452 323, Oct. 26, 1948.

A spinning ring is formed from a mass of sintered powdered metal having a porosity sufficient to transmit lubricant by capillary action and exude it at the surfaces of the ring. A seal is provided between the ring and support which prevents the transmission of lubricant from the ring to the support.

Winding and spooling B 5

Apparatus and process for crimping. Georg Heberlein (to Heberlein Patent Corp.). USP 2 463 620, Mar. 8, 1949. (See also USP 2 463 619, Mar. 8, 1949).

Yarn is fed under tension between a fixed entrance support and a fixed exit support and through a false twisting device placed between these. This operation imparts a high twist, which is released after the yarn leaves the twisting device, preferably within a short distance of the exit point, that is less than 1 meter (about 40 in.). The process produces wool-like characteristics in rayons and in cotton.

Automatic knockoff device for ring twisting and spinning machines. Jas. Davidson (to Toronto Carpet Mfg. Co.). USP 2 452 910, Nov. 2, 1948.

An improvement in the stop motion of the spool winding mechanism of ring twisting and spinning machines is a simple and inexpensive mechanism which may be readily applied to standard machines and which will automatically arrest the yarn feed to the bobbin and stop the rotation of the bobbin when the diameter of the yarn wound on the bobbin reaches the maximum desired so that it will not contact the spinner guide ring which surrounds the bobbin spindle.

Bobbin holder. Ben & Eric Carter. USP 2 464 024, Mar. 8, 1949.

According to this invention the spindle of a bobbin holder is provided with one or more rubber or like compressible rings, of a size requiring them to be compressed by the cop tube, and adapted to roll along the spindle as the tube is placed thereon and removed, suitable stops being provided to limit the rolling movement of the ring or rings. The spindle is made to a slightly tapered form so that, as the rings roll along the spindle during the placing of the cop thereon, they tend to become expanded by the spindle and are pressed more firmly against the cop tubes, thereby increasing the driving grip of the rings on the spindle and on the tube.

Bobbin holding means. Burt A. Peterson (to Barber-Colman Co. USP 2 466 861, Apr. 12, 1949.

A bobbin holder for use with automatic bobbin winding machines comprises an elongated slide equipped with a series of supporting pins. The slide may be attached to the winding machine or to a portable support for carrying the bobbins from one place to another. The device is particularly suited to use with rayon or other filament yarns in that easy handling is provided without the necessity of touching the bobbins.

Device for unwinding cakes of rayon and other textile material. Julien Faure. French P. 925 575, Mar. 31, 1947. (Through *Bull. de L'Institut Textile*).

This device disengages bound threads without manual intervention from the worker and without stopping the unwinding. It utilizes the force of inertia of a light rotating ring, with lugs on it, which is placed vertically and axially on the cake to be unwound. In case there is a binding or adherence of a thread, held by the tension of the bobbin, one of the lugs comes into contact with

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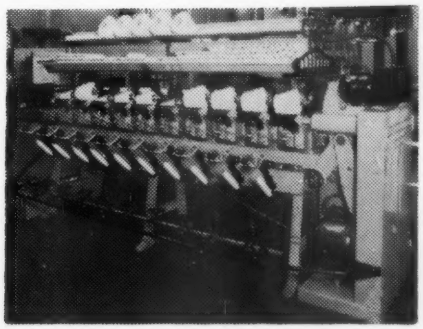

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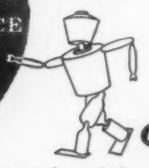

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this thread and imparts to it a jerk in the circular direction, thus disengaging the hold due to its adherence. The higher the speed the more effective is the device. The tension of the thread can be regulated by braking the rotation of the ring. The desired tension can be produced on the bobbin.

High-speed pirn winders build packages on varied principles. Anon. *Silk J. Rayon World 25*, 47-8, 50-1 (Feb. 1949).

The Scharer's high-speed pirn winder is distinguished by simplicity, steadiness and precision. Several outstanding features are described.

Machine for doubling or twisting yarns, threads, and the like. Melon Langstreth (to Dunlop Tire & Rubber Corp.). USP 2 463 887, Mar. 8, 1949.

This invention provides a disk doubling machine of the type having a support for the package hanging freely from a sleeve mounted freely on a hollow spindle carrying a rotatable disk over which the yarn passes, and a guide for the yarn disposed between the disk and the take-up point characterized in that the guide is supported by the sleeve independently of the package support. Advantageously the size and disposition of the guide are such that the yarn is held away from the package during its passage from the disk to the take-up point, but may be substantially larger. Thus a larger package can be accommodated than has been possible and the take-up point can be brought nearer to the disk. A package can be accommodated containing as much as 3 times the amount of yarn on packages accommodated previously. In addition, since the take-up point is brought nearer to the disk, a more compact apparatus results and a larger number can be mounted in a given space.

Means for collecting empty bobbins. Wm. C. Gibson, Jr. USP 2 443 855, June 22, 1948.

Empty bobbins are collected in troughs attached to each side of a spinning frame. A receptacle is placed at one end of the frame for the collection of the empty bobbins.

Packaging and using yarn. Edw. J. Abbott (to Abbott Machine Co.). Can. P. 447 213, Mar. 16, 1948.

A method of forming a package of yarn comprises delivering a running course of yarn to the place of formation of the package and causing the yarn to accumulate in superposed layers, and during such accumulating of the yarn holding the newly arriving yarn against the growing surface of the package by suction.

Platt's new light package uptwisting machine. *Textile Mfr. 75*, 213-15 (May 1949).

Details were recently released on a new uptwister, and the standard model, built to insert any pre-determined twist between the extremes of 2½ and 70 tpi, operates on a wide range of different types of yarns.

Procedure and apparatus for manipulating yarns, especially for unwinding them. E. I. du Pont de Nemours & Co. French P. 925 229, Mar. 24, 1947. (Through *Bull. de L'Institut Textile*).

Two yarns wound on the same support are separated by passing one of the yarns through guides placed at the exterior of the support, and passing the other over a side of the support, then axially through the hollow support.

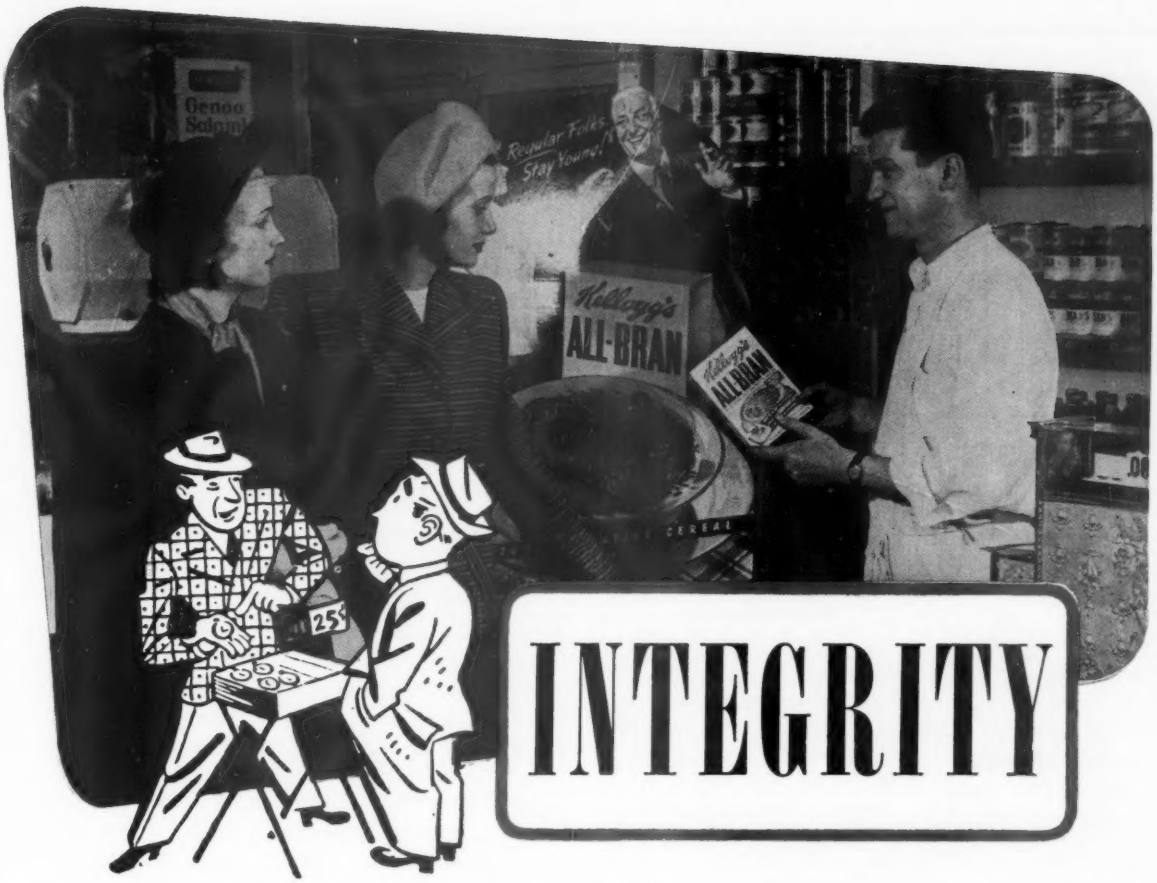
Process and apparatus for producing curly effects on yarn. August Künzle (to Heberlein Patent Corp.). USP 2 463 619, Mar. 8, 1949.

To obtain an efficient crimping effect on yarns of 450 deniers, for example, it is necessary to give them a twist of about 1000-1500 turns per meter (25.4 to 38.2 turns per in.). This requires a very high-speed twisting device, in which the twister head would make 60,000 to 90,000 rpm. Ballooning would take place in devices previously patented (USP 2 089 198, USP 2 089 199, USP 2 111 211 and USP 2 089 239), and at the required speeds, this would be disastrous. According to this patent, the yarn is passed along the longitudinal axis of a rotating twisting head rotated at 50,000 rpm or more and is maintained in alignment with the longitudinal axis as it enters and leaves the head. The false-twister head is mounted on one end of a hollow shaft of an electric motor, driven by alternating current of 500-2000 cycles per sec. from a high-frequency converter. All ballooning of the thread is prevented by means of a false-twister head having a central thread guide. This machine is in commercial operation and has produced thousands of yards of twisted yarn, without much breakage.

Solid cop winder. Saint Freres. Indian P. 38 994 (through *J. Sci. Ind. Research (India)*).

Stop-motion and cleaner for twisting frames. André Loustau. French P. 928 357, June 2, 1947. (Through *Bull. de L'Institut Textile*).

This stop-motion may be adapted to use on all frames. It consists of an armature in the form of a stirrup, the lateral flanges of which are provided with a slot which permits it to be attached to one of the cylinders. The equipment is at-



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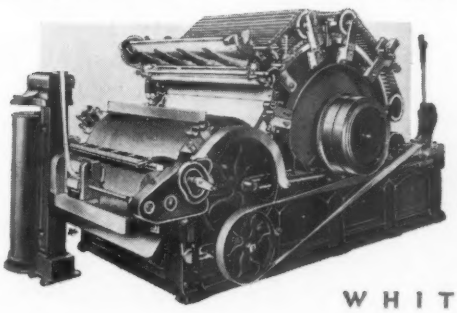

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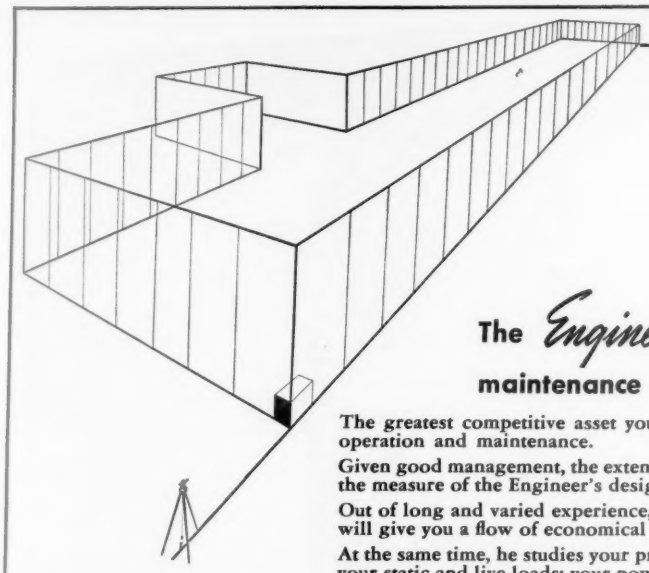

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tached so that it oscillates and a curved pointer is placed so that it will insert itself between the 2 cylinders when the yarn breaks. The stop-motion also functions as a cleaner.

Traverse motion. Otto W. Schlums (to Whitin Machine Works). USP 2 451 243, Oct. 12, 1948.

An improved mechanism for traversing the yarn guide in a machine of the up-twister type comprises cam means to control and vary the traverse to produce a package of a desired length and contour. By utilizing cams of selected contours, yarn packages of many desired shapes and traverses may be obtained from a single primary traverse motion. An automatic cut-out for the cam drive, and convenient means for resetting the cam are also provided.

Winding machine. Chas. D. Jencks (to The Werdna Co.). USP 2 463 773, Mar. 8, 1949.

An improved winding machine of increased sensitivity in the laying of the thread and controlling the contour of the package has a control roll connected with an independent source of power—i.e., motor—which may be set in operation for the re-

traction of the control roll, thus eliminating the burden imposed by the gears of conventional winders.

Winding of yarn. Garfield L. Boyce (to Am. Viscose Corp). USP 2 451 468, Oct. 19, 1948.

The present invention simplifies the procedure and equipment needed for producing a tail and for preparing wound packages, and so disposes the tail with respect to the completed packages as to eliminate the necessity to remove the cone or other package from its support on the creel after being once placed thereon, thereby greatly reducing the fatigue of the girl operators. In using tail-forming guides and methods heretofore common, it has frequently been necessary, especially for heavy denier yarns, to notch the base of the core in order to be certain that the tail would be formed properly. In the present procedure, a smooth, unnotched core is entirely satisfactory.

Yarn processing B 6

Apparatus and method for making curled yarn. Edgar Greenwood (to Massachusetts Mohair Plush Co.). USP 2 463 689, Mar. 8, 1949.

This invention provides an apparatus for use in making curled yarn which produces a composite strand of such a character that after it has been treated to set the curl in the individual yarn ends comprising the plural ply strand, the core strand can be readily removed from the composite strand without unwinding the plural ply strand therefrom, thereby leaving the plural ply strand in a tightly coiled condition. The plural ply strand is of such a character that a pulling force applied thereto in the direction of its length will stretch strands into one in which the individual curled yarn ends lie parallel to each other and in a non-twisted relation so that the individual curled yarn ends are ready for immediately being wound on individual bobbins or other yarn carriers.

Method of setting twist in threads or yarns. Theodore H. Story (to Radio Corp. of Am.). USP 2 465 130, Mar. 22, 1949.

An improved method of setting the twist of thread, yarn, cord, and the like comprises subjecting the package of yarn or thread to a substantially uniform high-frequency electric field which rapidly heats the dielectric thread substantially uniformly throughout until steam is generated uniformly throughout the entire package. The package is then immediately placed in vessels or chambers having a highly humid atmosphere for sufficient length of time to set the twist. These vessels or chambers may be filled with live steam. The time required to carry out the entire process will vary with the material being treated but will, in all cases, be only about 10% of that required to set the twist by steam alone. Thus, for example, in the case of rayon, the thread can be heated in about a half minute or a minute to 212°F by reason of the dielectric losses produced in the rayon to thereby vaporize the residual moisture therein, after which the hot package may be placed in a steam room for about 10 min. The initial heating (that is, by means of the high frequency electric field) can be carried out in the open or free atmosphere, if desired, so that the packages need not be wrapped or otherwise confined, while the steam heating takes place in a closed or confined vessel.

Special yarns B 7

Apparatus for forming fur filled yarns. Morris H. Siegel & Frances Sonin. USP 2 451 881, Oct. 19, 1948.

An improved technique and a simple form of apparatus for coating a thread of similar filament to form a fur filled yarn capable of being used con-

ventionally in a fabric weaving machine comprises means for forming the yarn by a sequence of steps including a disintegrating and opening out of the mass of indefinitely intermeshed hairs, the pre-laying of the hairs at least somewhat in parallelism, a gentle lifting of the hairs onto a travelling thread, in distinction from blowing them onto the thread, and which thread is preferably rotating about its own axis and sometimes coated with an adhesive.

Yarn products B 8

Braiding machine. Vincent G. Sokol. USP 2 464 899, Mar. 22, 1949.

This invention consists of a braiding machine having an inner set of bobbin or reel carriers and an outer set of bobbin or reel carriers, the carriers of the 2 sets being movable in opposite directions about a common axis. The carriers of the inner set are independently mounted for sliding movement in a circular path about the axis of the machine and are moved in this circular path by means of fingers. The yarn from the outer set of carriers is guided alternately inside and outside of the path of movement of the inner carriers and the finger feeding means for the inner set of carriers is so constructed and arranged as to continuously feed these carriers in a circular path but to avoid interference with or engagement with the yarn guiding means for the outer set of carriers.

Braiding machine carrier. Albert T. Lochner. USP 2 452 250, Oct. 26, 1948.

This invention facilitates the formation of a braid by maintaining each strand of the braid under a separate tension, responsive to the state of the strand at the braid former, so that each strand will be unwound from the bobbin, in accordance with the amount of strand needed by the braid former to form the braid. The strand as it is unwound from the bobbin, which is rigid on the spindle, is guided through a locking sheave or pulley, which is normally locked, so that the strand cannot be unwound from the bobbin. However, when the slack is taken up by the braid former and more strand is needed, a pulling force is exerted by the strand and causes release means to move into operative engagement with the clamping means and thereby releases the clamping means, to allow the desired amount of strand to be unwound from the bobbin. When such amount has been unwound, a slack in the strand is present and the releasing means is moved out of engagement with the clamping members, so that

the strand is again locked or clamped in the locking sheave.

Braiding machine for endless belts or the like. Joaquin M. Marti (to The Cordwares Co.). USP 2 452 136, Oct. 26, 1948.

A braiding machine is provided for applying a braided covering to an endless belt or ring. The endless belt or ring is placed in braiding position by passing it through a slot and special gear arrangement.

Fibrous product. Donald Finlayson & Richard G. Perry (to Henry Dreyfus). Can. P. 445 800, Dec. 23, 1947.

A process for the manufacture of ropes and like products comprises impregnating a rope or the like having a basis of fibers, including filaments of regenerated cellulose, with a solution of a water-resistant organic derivative of cellulose in a non-aqueous liquid at a temperature of at least 120°C and evaporating the liquid from the impregnated material.

Packing cord. Nathan I. Fleischer (to The Fleischer Mills Inc.). USP 2 465 081, Mar. 22, 1949.

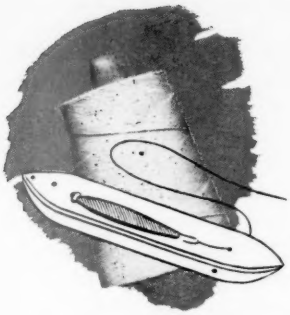
A soft packing or filler cord, characterized by its lightness and tensile strength, comprises a core of 2- or 3-ply cord of cotton, jute, or other fiber, around which is wrapped a soft, resilient filler of crepe paper and a braided jacket securing the filler portion in place.

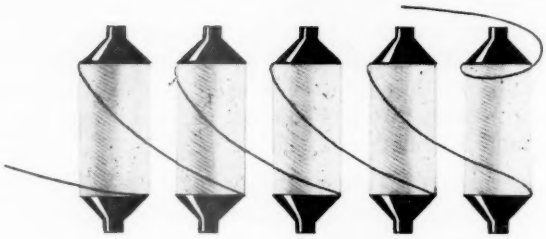
Process of producing viscose rayon yarn and fabric. Wm. B. Carden (½ to Elizabeth M. Carden). USP 2 464 433, Mar. 15, 1949.

An improved method of producing tire cord from viscous rayon comprises passing an assembly of filaments through a lubricating bath of a non-aqueous vegetable oil in such a manner as to individually coat the filaments with the lubricant, subsequently twisting the filaments into strands, and passing a number of such strands through a lubricating bath of a non-aqueous vegetable oil, and subsequently twisting the strands into yarn without interfering with the individual film coating of the filaments and strands. Threads of spun viscose rayon may also be used.

Spool adapter for rope layers or stranding machines. Michael McKosky. USP 2 452 255, Oct. 26, 1948.

An adapter which fits into the holes of bobbins or spools of different sizes makes possible the use of different size supply spools or bobbins in the cradles of a stranding machine or layer of a given standard size or type.





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Tire fabric. Alvin J. Musselman. USP 2 468 304, Apr. 26, 1949.

A fabric for use in the manufacture of tires and other rubber articles comprises nylon cords, certain of which are encased in fibrous material having non-continuous filaments—e.g., short-fibered cotton yarn—the encased cords being disposed side by side and bound together by an adhesive coating containing rubber. The fibrous material may cover the nylon cords as a winding or in braided form. The nylon cords are free to stretch lengthwise within and independently of the fibrous material.

Yarn applications B 9

Article, particularly sole, made of stripping. Jon Gregg. USP 2 466 944, Apr. 12, 1949.

This invention provides a sole comprising a wound braided strip which consists of a core and cover yarn of thermoset material and cover yarn of fibrous thread, the thermoset yarn in adjacent windings of the braided strip being fused together and penetrating the fibrous threads to unite the windings, the yarn of thermoset material having a core of textile thread.

FABRIC PRODUCTION C

Yarn preparation C 1

Improved composition for preparing sizing material for textile fibers and process for making same. Jagannathan & Chipalkatti, Delhi Cloth & Gen. Mills Co. Ltd. Indian P. 37 426 (through *J. Sci. Ind. Research (India)*).

Comprising rosin, glue, an emulsifying oil and a preservative.

Improvement in materials used to size textile warps. Stein Hall & Co. French P. 931 371, Octo. 13, 1947.

A new sizing composition containing a common starch (wheat, corn, or potato) and a waxy starch (such as that of waxy corn, an amylopectic starch extracted from hybrid corn or waxy sorghum) has the advantages that it is elastic, does not coagulate at 15-20°C.. or form a film, and can be used after storage. It does not contain ordinary softening agents and does not have the disadvantages of ordinary sizing materials.

Knowledge and practice of sizing. H. Gensel. *Melliand Textilber. 29*, 243-46 (July 1948); *in German.*

Following a general consideration of the subject

of sizing, the degradation of starch by chemical agents as well as by mechanical means is described in detail. Synthetic products prepared from cellulose which serve as substitutes for starch in sizing of cotton are discussed and the technique of sizing of cotton warps (temperature, frothing, and machinery employed for the purpose) is illustrated. The process of sizing of rayon in the hank and on machine is explained. In this connection particular attention is accorded to improvements effected in the method of sizing in the hank with linseed oil.

Laboratory evaluation of sizing materials for nylon hosiery yarns. Herman B. Goldstein, Warwick Chemical Co. *Am. Dyestuff Reptr. 38*, 372-3, 377 (May 2, 1949).

The physical properties of nylon and the sizing of nylon are reviewed briefly; laboratory methods for the evaluation of nylon sizing materials are described and illustrated.

Sizing of grey and dyed yarns in the damp state. W. Sturzaker. *Textile Mercury 120*, 295-96, 298, 301 (Feb. 25, 1949).

The importance of selecting the correct sizing for yarns which will have varying end uses is stressed. The procedure followed in applying the sizing is outlined For purposes of description the sizing machine is divided into 4 sections, namely: the creel, the sour box, the drying cylinders and the headstock.

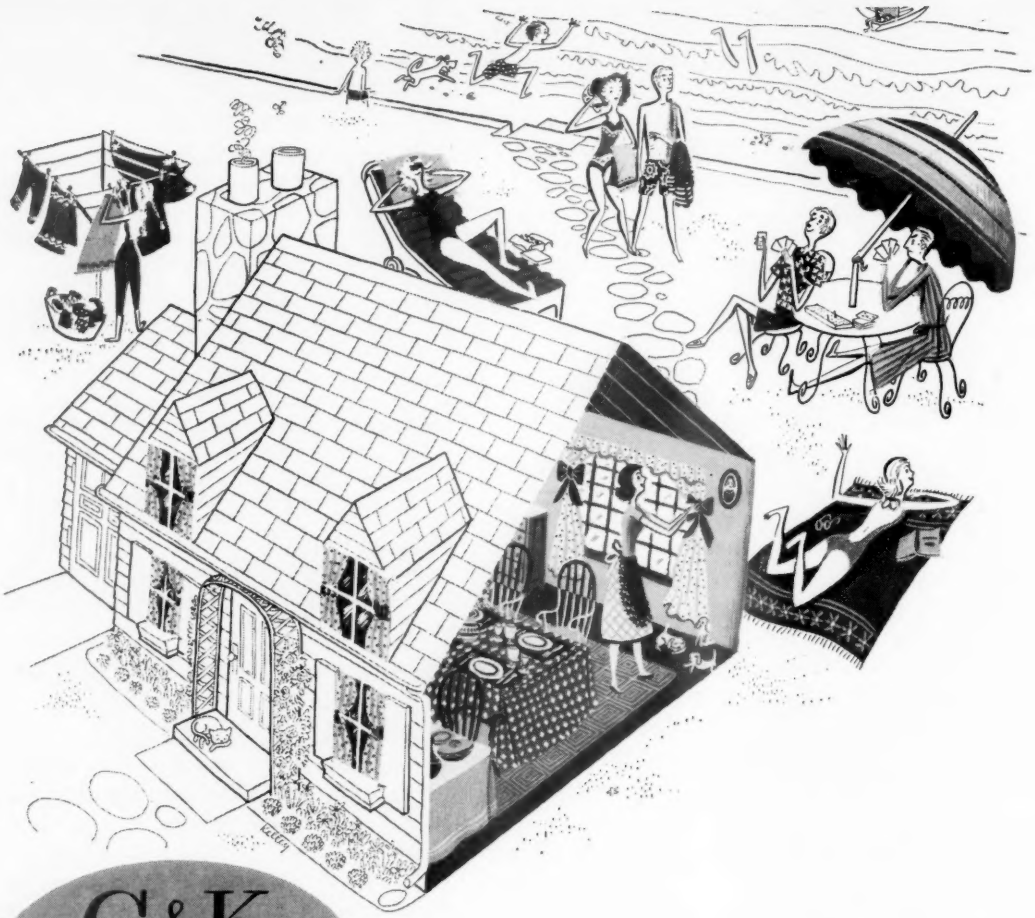
Winding rayon. Jas. F. Keith (to Am. Enka Corp.). USP 2 466 852, Apr. 12, 1949.

An improved thread support for use on creels holds 2 packages of thread on a rotatable member. Upon depletion of one package the other moves into the same position and a fresh package is inserted by the operator. In this manner both thread packages are unwound from a single draw-off point.

Weaving C 2

Adjustable mounting for bobbin magazines. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 468 525, Apr. 26, 1949.

This is a division of USP 2 455 149 (TTD: *6*, 119). It is occasionally desirable to be able to effect slight adjustments in the vertical position of the bobibn magazine and to accomplish this the present invention forms the pivot of the magazine as an eccentric to enable the magazine to be raised or lowered to place the bottom bobbins in transfer position correctly with respect to the

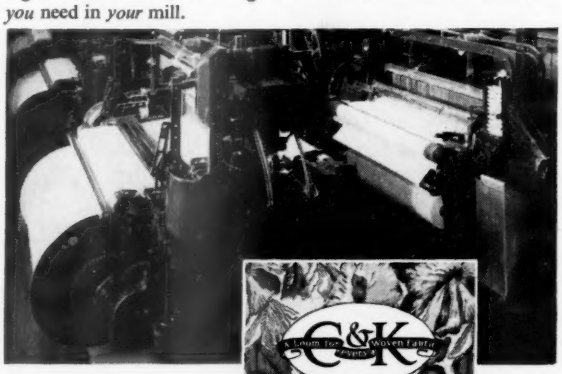


C&K C-LOOMS *cover a multitude of Fabrics!*

Cotton, spun rayon and blends... for handkerchiefs, dress goods, shirtings, marquisettes, terrys, hucks, upholsteries, part-wool and all-wool blankets . . . this is the range of C & K's famed family of *endlessly versatile* C-Looms, equipped with dobbies, head motions, cams and jacquards.

This unmatched versatility is based on exclusive C & K features like these: *Convertibility* to operation either as a 4x1 box automatic bobbin-changing loom, or as a 4x4 box non-automatic . . . also with the *Tricolor* feature, which allows automatic bobbin-changing production of fabric with 3 kinds of filling in unchangeable sequence of single picks such as 1 red, 1 white, 1 blue. . . . All-Purpose Take-Up assures adequate tension, provides 4 choices of threading. Other features include full automatic warp let-off, and new feeler mechanism which stops a pick-and-pick loom before filling is exhausted. Also, there's a wide choice of shuttles, accommodating bobbin sizes from $7\frac{3}{8}$" to $10\frac{1}{8}$", with wound diameter up to $1\frac{5}{8}$".

This versatility of C & K C-Looms is a lifesaver (in fact, a mill-saver) in today's competition and quick-changing market trends, for it provides mills with a capacity to produce a wide range of specialties that can't be matched by any other looms. That's why it pays to equip your weaverooms with these new C-Looms, built by the world's largest builders of *proved* automatic looms for mixing colors and kinds of filling. Write for details on the C-Looms *you* need in *your* mill.



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shuttle on the lay. Any horizontal displacement of the lower end of the magazine caused by adjustment of the eccentric can be corrected by adjustable stops which determine the 2 extreme angular positions to which the magazine can be swung. (See also USP 2 468 524 below).

Auxiliary mechanism for loom. Sulzer Freres Societe Anonyme. Australian P. 131 974, Mar. 1, 1946.

For executing auxiliary motions when rectifying troubles in a textile machine, the manufacturing operation is stopped, parts of the machine which are to be moved when rectifying troubles are uncoupled and thereafter, during temporary blocking of the coupling in its uncoupled state, are coupled to an auxiliary drive. At least one pair of couplings are connected by operating linkages. The coupling is effective during the manufacturing operation and is held in uncoupled position by a blocking so that it can serve as a support when operating the second coupling with the aid of the linkage for executing an auxiliary motion.

Beam regulator. Rudolph Hrdina. French P. 933 067, Dec. 17, 1947. (Through *Bull. de L'Institut Textile*).

The invention consists in mounting a transmission gear box on the shaft of the warp beam, in which a rotating shaft drives one of the transmission gears, mounted idle on the drive shaft. The transmission case is placed, entirely or partially, in the hollow of the beam to give a compact design. The regulation of the gear ratio is indicated by a pointer which determines the picks per unit length. When the number of picks is changed, the gear ratio can be changed by shifting the shaft of the transmission, instead of replacing a gear.

Beating-up mechanism for looms. Walter D. Shimwell French P. 932 915, Dec. 1, 1947. (Through *Bull. de L'Institut Textile*).

This is a device for imparting an upward and backward oscillatory motion to the reed which allows the shuttle to pass into the shed more promptly. A set of oscillating rods cause the reed to move up and down, while eccentrics give them an oscillation which imparts a backward and forward motion to the reed. It is designed for the production of narrow fabrics.

Bobbin replenishing mechanism for looms. Burt A. Peterson (to Barber-Colman Co.). USP 2 463 904, Mar. 8, 1949.

Bobbins wound with rayon are supplied automatically to the supply magazine of weft replenishing looms by a device which supports each bobbin individually, thereby preventing injury to the yarn wound on the bobbins.

Circular looms and shuttles therefor. Saint Freres. Indian P. 38 993 (through *J. Sci. Ind. Research (India)*).

Combing warp threads and tightening weft thread in circular weaving loom. Saint Freres. Indian P. 38 991 (through *J. Sci. Ind. Research (India)*).

Dagger stop for looms. Walter J. Budzyna (to Draper Corp.). USP 2 451 914, Oct. 19, 1948.

A dagger stop comprises means whereby any of several kinds of materials may readily be put into use as cushioning material so that pressure created on the dagger may be employed to complement the spring used to force the binder inwardly against the shuttle for checking the same. It has been found that using compressible materials of different characteristics when used singly or in combination on the dagger stop to receive the impact when stopping the dagger, makes it possible to run a loom designed for a certain number of picks, at a relatively higher number of picks. This may be done since in each case the normal clearance between the binder and dagger finger bolt may be done away with, and the resilience of the bumper or cushion material employed to apply a varying degree of back pressure on the dagger. This will, in addition to safely increasing the shuttle checking action of the binder, maintain the dagger in a stressed condition tending to immediately return the same toward protecting or loom stopping position when the shuttle is picked out of the shuttle box and the binder pivots inwardly releasing the dagger finger for movement. This action tends to prevent the dagger from dwelling in non-protecting position, commonly known as overthrow or failure to protect.

Driving device of warp frames for looms. Picanol. Indian P. 36 389 (through *J. Sci. Ind. Research (India)*).

Harness stop motion attachment for looms. John R. Svancarek. USP 2 465 615, Mar. 29, 1949.

An improved harness stop motion attachment for looms will not only stop the loom from operation should a heddle-strap break, but will also close a switch mechanism for operating an audible or visual signal so that the loom operator will immediately know when a heddle-strap breaks, thereby permitting the heddle frame to fall on the

contact bar of the attachment to stop the loom and to close the circuit to an audible or visual signal which will indicate to the loom operator that there is trouble.

High practical speeds claimed for Belgian automatic loom. Anon. *Silk J. Rayon World 25*, 42-3 (Feb. 1949).

Several interesting details of the new loom's mechanism are described. Characteristic features are low built frame, absence of shaft harness and other overnead gear. The shafts are operated from below by positive cam shedding motions at each side.

Improvements in circular looms for weaving hose or flexible tubes. Christian Christiansen & G. O. K. Rusch. French P. 926 754, Apr. 21, 1947. (Through *Bull. de L'Institut Textile*).

Flexible hose which must be clamped under very high pressure but which must remain pliable, is woven with the aid of a finger which presses the weft yarn between the warp yarns. This mechanism makes possible a closer packing of the threads, a twist which is lower by 20-30% for both the warp and weft, and a reduction in the weight of the hose of 10%.

Lancashire firm introduces new cam type dobby. Anon. *Silk & Rayon 23*, 247 (Feb. 1949).

Richardson, Tuer & Co., Ltd. have developed an improved cam-driven dobby. Its smooth and gentle drive transmits a steady lifting motion to the healds and provides a suitable period of dwell at the open shed position. This permits a minimum shed with the minimum of warp strain.

Loom. Robt. E. Walliser (¼ each to Arthur Hanisch, Wm. F. Stahl, David H. Berman & Thor S. Johnson). USP 2 464 624, Mar. 15, 1949.

In a loom for weaving fabric and rugs with projecting loops of thread extending from the surface thereof, there is provided means for projecting loops in a portion of the warp threads, the loops extending from the woven fabric; a needle arranged to engage the pile warp threads, to advance same and to form loops therein, and to thereafter release the threads; a shuttle mechanism for periodically weaving a weft thread between warp threads, and means for interrupting the operation of the shuttle mechanism for a single period; and angularly-positioned pile projecting needles and means for severing the projected pile threads. (See also USP 2 448 929, TTD: *5*, 670).

Many interesting features in new rayon loom. Anon. *Silk & Rayon 23*, 246-7 (Feb. 1949); *Textile Mercury 120*, 173, 175, 177 (Feb. 4, 1949).

The chief details of construction of the Henry Livesey improved silk and rayon loom are considered.

Means for detecting caught threads in circular looms. Fayolle. Indian P. 39 401 (through *J. Sci. Ind. Research (India)*).

Motor-driven letoff for looms. Raymond F. Dion & Walter H. Wakefield (to Crompton & Knowles Loom Works). USP 2 465 071, Mar. 22, 1949.

Improvements in motor driven letoff mechanisms for looms comprises manual means by which the motor can be turned reversely to move the fell of the cloth rearwardly until the maximum warp tension has been attained, at which time the motor tries to run forwardly and in doing so produces a counter-torque which is readily perceptible by the weaver and indicates to him that the proper tension has been established.

Movement and speed of a shuttle during a single traverse of a power loom. I. H. Thomas. *Fibres 10*, 89-93 (Mar. 1949).

An account is given of the "catapult" theory of picking and use is made of this theory in devising a formula for determining the speed of projection of the shuttle. The effect, on the speed of projection, of variations in the weight of the shuttle, in the loom speed and in the elasticity or deformation under load, of the picking mechanism, is discussed. The way in which the speed of the shuttle is affected by alterations in the settings of the picking mechanism which are under the control of the loom overseer is considered.

New automatic let-off motion. Anon. *Textile Mercury 120*, 347 (Mar. 4, 1949).

A report on an automatic let-off motion designed by Henry Richmond which is based on the principle of loom weighting by compression springs.

Pick motion for looms. Wm. H. West (to The Alabama Textile Eng. Co.). USP 2 450 463, Oct. 5, 1948.

This invention features a spring-driven picker stick, means operated in unison with the main drive shaft of the loom for storing energy in the spring, a latch to hold the picker stick against movement under the influence of the spring, and means operating in unison with the lay periodically to release the latch means to allow the picker stick to be driven under the influence of the spring to throw the shuttle across the loom.

Picker. Bernard Czekalski. USP 2 465 852, Mar. 29, 1949.

This invention provides a fibrous picker which is built up of vulcanized fibrous material; the picker also includes oppositely disposed wear lugs which may either be formed of the same material as the body of the picker, or may be formed of different material, such as wood, composition or the like. The wear lugs extend through the slot in the picker and form increased wear surfaces for engagement with the picker stick so that the latter will not have a groove formed therein from contact with an end of the slot in the picker.

Picker for looms. Richard S. Nelson. USP 2 468 102, Apr. 26, 1949.

A picker of improved design can be made of urea-formaldehyde and phenol-formaldehyde compositions and may be reinforced by fabric, twine, or string filler molded into it. A preformed hole of oval or oblong shape allows entrance and withdrawal of the shuttle without frictional resistance.

Picker stick stop for looms. Walter J. Budzyna (to Draper Corp.). USP 2 468 709, Apr. 26, 1949.

This invention provides a slot in the lay within which the picker stick is moved, the slot being formed open for permitting the picker stick to be swung free of the end of the slot at the extreme lay end, and a picker stick stop member detachably and adjustably fixed within the open end of said slot.

Picker motion for looms. John Heaton (to Electro-Pneumatic Looms, Ltd.). USP 2 454 603, Nov. 23, 1948.

According to this invention air pressure is directed onto the shuttle rear portion in the shuttle box while the shuttle bears against a seating through which the air passes. Back air pressure created by a shuttle entering a shuttle box may be relieved automatically by valve means. The air inlet to a box may be in alignment with the shuttle or at an angle to its direction of travel. Air compression may be created by one or more pistons or obtained from a constant pressure supply source, and the compressed air controlled automatically by valve means to drive the shuttle in each direction across a loom. The valve means may be displaceable by back air pressure when a shuttle enters a box to admit air back into the compression system.

Procedure and apparatus for grasping the weft yarns. Rudolf Hrdina. French P. 931 170, Sept. 29, 1947. (Through *Bull. de L'Institut Textile*).

This is a new method of grasping the weft yarn from an exhausted bobbin on an automatic loom. At the moment of the change of bobbins, the weft is seized and cut near the bobbin. The yarn is then deposited on the brush; the other end is still attached to the selvedge and is cut by shears. The weft end remains on the brush and is entirely free; it can be removed by the weaver. The arm carrying the brush returns to its position of rest until the next bobbin change.

Producing selvedges in fabrics woven on circular looms. Saint Freres. Indian P. 38 980 (through *J. Sci. Ind. Research (India)*).

Reversing mechanism for looms. Clarence R. Kronoff & Victor F. Sepavich (to Crompton & Knowles Loom Works). USP 2 452 380, Oct. 26, 1948.

A reversing control for heavy looms such as those used in carpet manufacture permits the loom to be reversed under power and controls the extent of reversal so that no damage will be done to the picking mechanism. The lay is moved backward away from the cloth to permit the removal of the shuttle from the warp.

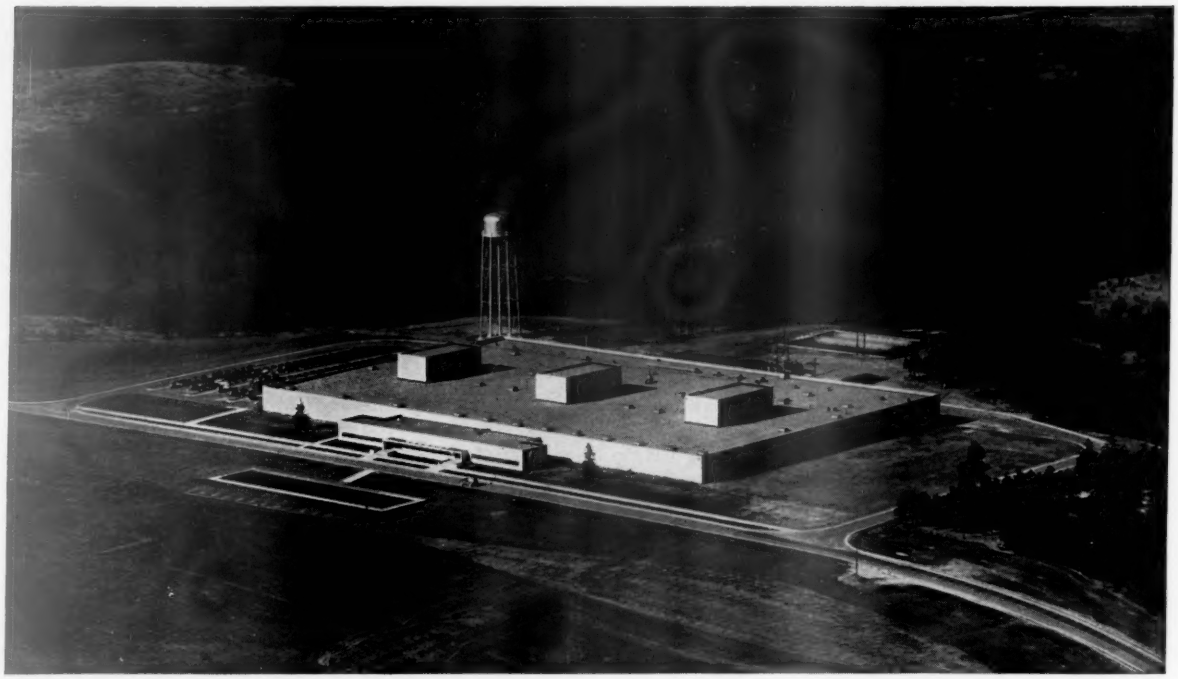
Semi-automatic weaving loom. Intabo A. G. Indian P. 39 304 (through *J. Sci. Ind. Research (India)*).

Shedding means for circular looms. H. J. Cooper. Australian P. 131 869, Dec. 9, 1946.

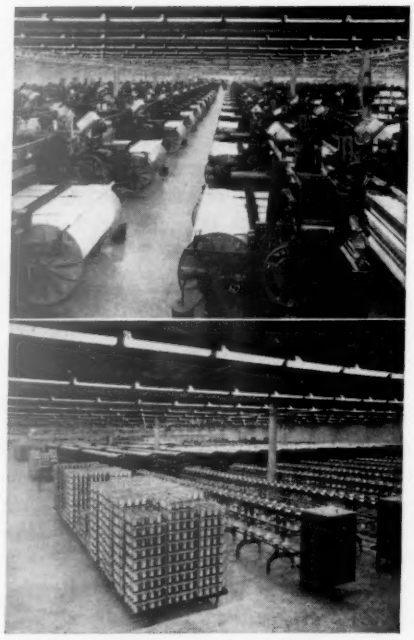
Oscillatable shedding blades and spacers are mounted on a member which has a projection whereby it can be supported in the loom. The projection is of a sufficient dimension to ensure adequate freedom from vibration while at the same time the blades cannot be separated from the member, but can be moved into an operating position when the loom is being set up without dismantling the member or its supporting projection from the loom.

Shuttle. Heinz Menking (to Aluminum Co. of Am.). Can. P. 445 435, Dec. 9, 1947.

A method of making from magnesic metal a shuttle body of high yield strength in compression comprises extruding magnesic metal through a die to form an extruded section of indeterminate length and of cross sectional shape approximating the structure of the desired shuttle and thereafter separating from said extruded shape shuttle body blanks, the line of separation of each blank from said shape being so selected that the longitudinal axis of a shuttle body shaped from the blank will lie at approximately right angles to the direction of movement of the extruded sections from the die.



GERRISH MILLIKEN MILL



The Gerrish Milliken Mill at Pendleton, S. C., named after Gerrish H. Milliken, was designed by Deering, Milliken & Co., Inc., to be the most efficient mill in the world for the twisting and weaving of filament rayon fabrics into the finest quality rayon crepes and combination yarn fabrics.

The finished structure incorporated wide floor areas to make material handling fast and easy; air-conditioning; fluorescent lighting and the latest, most highly developed textile machinery—everything that contributes to the quality of Milliken Fabrics.

Daniel Construction Company, the general contractors, convinced that very little additional expense would add structural grace to productive efficiency, collaborated with Carson and Lundin, New York architects, to create the impressive structure illustrated.

Glareless specifications were met by the development of an entirely new type of exterior white brick. The harmony of the landscape was preserved by making the air-conditioning spray pond into a decorative fountain.

Building an industrial plant to such specifications creates a satisfaction that balances the exacting responsibilities for both contractor and owner.

DANIEL CONSTRUCTION COMPANY, INC.

GREENVILLE, SOUTH CAROLINA **BIRMINGHAM, ALABAMA**

Shuttle for circular looms. Saint Freres. Indian P. 38 992 (through *J. Sci. Ind. Research (India)*).

Slay motions for looms for weaving. Marsden. Indian P. 39 353 (through *J. Sci. Ind. Research (India)*).

Thread collector for weft replenishing looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 463 923, Mar. 8, 1949.

A thread collector has a porous tube or the like in the lower end through which a partial vacuum can be created within the collector; the weft threads are introduced from the reserve bobbins in the top of the collector so that they are drawn down toward the tube; the short filling threads are introduced from the thread remover into the collector at a point above the bottoms of the weft ends attached to the reserve bobbins. In such a construction, it is found that the weft ends form a wad or the like over the tube serving as a screen to allow air to pass therethrough but entangle the short filling threads coming from the remover. The tube is therefore kept substantially clear and is more efficient in its operation.

Variable-speed sand roll take-up for looms. Rudolf Hrdina. USP 2 465 649, Mar. 29, 1949.

A variable-speed sand roll take-up for looms has a change speed gear in which the desired weft thread set is obtained, without changing the gear wheel, by a simple displacement of the shaft of the change speed gear. The gear casing is mounted on the shaft of the sand roll, and within the sand roll, but is independent of said sand roll.

Vibration preventer for bobbin magazines. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 468 524, Apr. 26, 1949.

This is a division of USP 2 455 149 (TTD: *6*, 119). In the weaving of fabrics requiring 2 shuttles, a rocking magazine may be employed which can be shifted to place the lowest bobbin in either of the 2 bobbin stacks in transfer position. This requires a pivot for the magazine and also generally requires that the outer or bobbin tip engaging plate of the magazine be supported from the inner or butt engaging plate of the magazine. When magazines of this type are made large enough to accommodate a considerable number of bobbins it is found that the outer plate tends to vibrate, and to correct this condition the present invention provides anti-vibration guides, such as rolls, positioned to engage the inner plate of the magazine.

Warp stop motion drop wire. Harry F. Weddington. USP 2 452 004, Oct. 19, 1948.

A warp stop motion drop wire has one leg on one side of the slot, through which the drop wire bar passes, severed so that it may be bent to one side and the drop wire passed over the drop wire bar. A slidable sleeve is provided which is slipped over the point of severance, thus bridging the gap and permitting the operation of the drop wire as if it were unsevered.

Weaving in looms comprising a pattern device. Adolf Lanz (to Baumwoll-Spinnerei & -Webberei Wettingen). USP 2 465 689, Mar. 29, 1949.

This invention provides an arrangement for use with looms for producing woven effects by conducting threads separated out from the warp over a guide member, preferably constituted as an oscillatory member, and which, during the weaving is moved to and fro so as to subject the threads to an alternating tension so that effects corresponding thereto will be produced in the fabric, the suitable selection of threads deflected out of the normal web of the remaining warp serving to effect a more or less pronounced wavy incorporation of the weft wherein the wavy portions may be of uniform or non-uniform configuration.

Weaving machine. Geo. E. Ezbelent. USP 2 454 146, Nov. 16, 1948.

This invention provides a circular weaving machine in which the shuttles are given a continuous circular movement between the 2 sheets formed by the warp threads. The spacing between the shuttles is controlled and made constant by electric or magnetic devices which are mounted upon the shuttles and are operated from a distance. Owing to these characterisics, the shuttles are actuated without requiring the use of mechanical means situated outside of the shuttles, thus greatly simplifying the construction of the machine and providing for a much more steady operation, by relieving the warp threads of all stresses or risks or breakage. It is possible to change the number of shuttles on a given machine at will, according to the work to be executed.

Weft feeler for pick-and-pick looms. Andre Bonnamour. French P. 931 754, Nov. 3, 1947.

This is an electric instrument with a needle which closes an electric circuit and energizes an electromagnet when the quill is exhausted. The same stop motion may be used for ends down on both warp and weft.

Weft fork for circular weaving looms. Societe D'Etudes et Recherches Mecaniques. Indian

P. 39 402 (through *J. Sci. Ind. Research (India)*).

Weft stop motion for circular looms. Saint Freres. Indian P. 38 981 (through *J. Sci. Ind. Research (India)*).

Knitting C 3

Analysis of nylon hosiery sizes. R. D. Bennett, Can. Industries Ltd. *Can. Textile J. 66*, 42, 44 (Apr. 29, 1949).

This is a discussion of methods of evaluating full-fashioned hosiery and circular hosiery sizes to assure proper fittings, maximum wear, and consumer satisfaction.

Attachment of helically wound wire coils to edges of woven fabrics. Clutsom. Clutsom & Kemp Ltd. Indian P. 38 543 (through *J. Sci. Ind. Research (India)*).

Circular knit hosiery and method of making same. Scott & Williams Inc. Indian P. 37 889 (through *J. Sci. Ind. Research (India)*).

Circular knitting machine. Frederick E. Deans & Carlyle H. Wainwright (to The Bentley Eng. Co. Ltd.). USP 2 466 933, Apr. 12, 1949.

This invention concerns circular knitting machines and means therein for holding stationary a member which is located between 2 rotating members that are nested one inside the other. Heretofore, it has been necessary to provide 2 separate drives for the 2 rotating members, including 2 separate support members therefor each with its bearing. Such known arrangements have disadvantages, including weight, complexity, and multiplicity of parts. The present invention provides in a circular knitting machine, the combination of 2 rotary members nested one inside the other, a stationary member interposed between them, a common rotary support to which both rotary members are attached and by which they are supported and driven, and mechanism for supporting the stationary member and for preventing its rotation comprising at least one circumferentially-extending aperture or window in one of the rotary members, a plurality of non-rotatable and circumferentially-spaced locking elements capable of projection one after the other through the rotating aperture to support and lock the stationary interposed member, and means for projecting each one of the elements in turn only while the aperture passes it, the arrangement of which mechanism is such that at all times at least one element is operative. (See also USP 2 463 751 below).

Circular knitting machine. Interwoven Stocking Co.). Australian P. 131 926, May 26, 1945.

A double cylinder dial knitting machine includes a verge having 2 sections individually movable, by selective means, between a position in which it cooperates with the needles in the upper cylinder and a portion out of the path of movement of the terry instrumentalities. The terry instrumentalities are operated by means of cams when the corresponding verge section is in the second position only.

Circular knitting machine. Edgar W. Clarke (to Mercury Mills Ltd.). Can. P. 445 491, Dec. 9, 1947.

In a knitting machine having co-axial needle cylinders with needles operable in either cylinder and means for feeding a plurality of threads to the needles, the combination with means for manipulating needles in the lower cylinder to draw needle loops of thread fed by the feeding means, of sinkers associated with the lower cylinder and cooperating with needles in the lower cylinder to form sinker loops of one of the threads, and instrumentalities associated with the upper cylinder and cooperating with needles in the lower cylinder to form sinker loops of another of the threads.

Circular knitting machine. Edgar W. Clarke (to Mercury Mills Ltd.). Can. P. 445 492, Dec. 9, 1947.

A knitted article comprising a section of terry fabric composed of body thread and terry thread, the terry thread being knit in accurate plating relation with the body thread to form terry loops on one face of the fabric and also form the opposite face of the fabric, thereby concealing the body thread.

Demonstrating device for knitting materials of the Jacquard type. Antoine Col. French P. 930 204, July 28, 1947. (Through *Bull. de L'Institut Textile*).

The device consists of a sample of the design, a sheet of paper on which a schematic design is reproduced, and a graduated rule for locating exactly the square which corresponds to the link which is being knitted. It is used to facilitate the correct reproduction of a design by hand knitting.

Device for facilitating the design of knitted fabrics. Antoine Col. French P. 930 203, July 28, 1947. (Through *Bull. de L'Institut Textile*).

This is a new method of making and altering models of knitted fabrics. The sample to be reproduced is represented on a card and elementary

parts of the patterns are mounted on needles to represent the successive rows.

Electric stop motion for textile machines. Shelton J. Thomas (½ to Robbins Cloth Mills, Inc.). USP 2 464 468, Mar. 15, 1949.

Means are provided whereby upon the breakage of a strand of yarn, which is generally at the needles in a tricot knitting machine, an intermediate portion of the yarn will be forced by air against an adhesive roll and the yarn, which is being drawn from the warp beam, will be rolled up onto the adhesive roll as well as the loose end which extends beyond the roll; when the machine has automatically stopped, following the breakage of the yarn, the rotation to the adhesive roll may be reversed manually to draw the free end of the broken yarn off the roll and to thus have a sufficient length of yarn to again thread the needles without having to piece the yarn.

Electrical stop motion for knitting machines. Chas. W. Arrowood. USP 2 467 366, Apr. 19, 1949.

An electrical stop motion is provided which serves to close a circuit when the tension in the yarn becomes too great, or on the parting of the yarn. The electrical circuit is associated with a stop motion that is activated when the circuit is closed.

Electrical stop motion for knitting machines. Chas. W. Arrowood. USP 2 468 611, Apr. 26, 1949.

An electrical stop motion for knitting machines knitting fine denier nylon yarns is provided.

Element X in nylon. A. W. Staudt, E. I. du Pont de Nemours & Co. *Knitter 13*, 69-70, 72, 74 (Apr. 1949).

See TTD: *6*, 468.

Knitted article, method of making this article, and device for operating according to this method. G. C. A. Alric. French P. 931 061, Sept. 15, 1947.

The method is based on the fact that the lines of the links making up the heel of a stocking are oblique in relation to the line of separation of the heel and foot. The number of these links is approximately constant in each of the rows in the heel and the connection of the links between the heel and the foot is analogous to that of the standard half-heel. The method consists in knitting in the prolongation of the lateral parts of the length of the stocking 2 pieces in the form of a parallelogram, of which the side connecting with the upper part of the foot remains on the knitting needles and the knitting of the middle part is interrupted during this phase of the operation. The knitting

is then resumed over the total width to complete the foot.

Knitted fabric. Henry H. Holmes (to Wildt & Co., Ltd.). USP 2 468 668, Apr. 26, 1949.

A knitted fabric is provided with pattern effects constituted by terry looping in at least one desired area; the pattern effects are interspersed with both rib stitch and also links-links stitch effects, and with terry loops throughout at least one selected section of the fabric.

Knitting machine. Geo. O. Young (to Vanity Fair Mills, Inc.). USP 2 461 583, Feb. 15, 1949.

This invention provides a flat or tricot-type knitting machine in which the use of the rock shaft of the machine, which has bearings for the needle-bar and the tongue-bar carrying shafts, is eliminated. The weight of the needle bar, tongue bar and sinker bars is carried entirely by the main eccentric shaft of the machine and reciprocating rods or shafts are employed for supporting them. Further, the sinker bar has an oscillating movement instead of a rectilinear or reciprocating movement, and adequate provision is made to support the main eccentric shaft so that it can carry the weight imposed upon it without vibration or bending. Means are provided for adjusting the eccentrics so as to give the proper movements to the needles, tongues and sinkers.

Knitting machine. Frank R. Page & John J. McDonough (to Scott & Williams Inc.). Can. P. 445 513, Dec. 9, 1947.

In a circular knitting machine adapted to knit in reciprocation, a circular series of independent needles having operating butts thereon and means adapted to separate the needles vertically into active and inactive groups for reciprocating knitting, in combination with sinkers adapted to cause the formation of terry loops when inserted earlier than usual, a cam adapted to insert sinkers early and means operated by the butts of one of the groups of needles adapted to cause insertion of the sinker cam at various times.

New Raschel warp-knitting machine. Anon. *Silk J. Rayon World 25*, 40-1 (Feb. 1949).

The new Raschel warp-knitting machine is designed for knitting with practically any type of yarn, including elastic. Dress materials, outerwear fabrics, narrow fabrics and other fabric styles can be produced. Special claims are for speeds up to 400 courses per minute, accessibility of parts, simplicity of design and rapid pattern changing.

Power-operated flat frame knitting machine. Cecil D. Alexander & Saml. Gibson (to Brit. Textile Mfg. Co. Ltd.). Can. P. 445 591, Dec. 16, 1947.

This invention provides in an apparatus for tensioning fabric being knitted in a flat frame knitting machine of the type in which at least 1 needle-bed, needles and yarn guides cooperate to form selvedge loops and a take-down roller for the fabric is mounted beneath the needle-bed, the improvement which comprises a rigid slender depending tension member positioned to extend downwards parallel to the center line of the fabric through loops of selvedge stitches of the fabric being knit to a point closely adjacent to the periphery of the take-down roller, whereby the selvedge edge of the fabric is held parallel to the center line of the fabric being knit to a point approximating its engagement with the take-down roller.

Textile spreader. Edw. S. Beard. USP 2 450 932, Oct. 12, 1948.

A textile spreader for use in forming the size of the tubular knit goods, e.g., undershirts, consists of a U-shaped member the legs of which are attached at their ends to a cross piece from which

2 reinforcing rods extend diagonally to converge at the bottom of the U.

Thread guide bar mounting for knitting machines. Geo. O. Young (to Vanity Fair Mills, Inc.). USP 2 451 187, Oct. 12, 1948.

This invention provides a thread guide mounting of such construction that the guides may be swung to different angular positions and held there when adjustments, or replacements of guides becomes necessary, by virtue of which when more than one thread guide set is used on the machine, the front set may be swung out of the way to give easy access to the other set, all without disconnecting the thread guide bars from the machine.

Thread tensioning device. Ralph N. Toone. USP 2 451 889, Oct. 19, 1948.

This invention consists in the provision of means whereby the rubbing area (i.e., length of contact) of a tensioning device can be readily varied and means whereby the effective weight on the thread can be varied. It also includes a thread-tensioning device, comprising 2 superimposed members between which the thread travels to be tensioned by friction, characterized by guides af-

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fording a plurality of alternative thread paths between the 2 members to be selectively employed for varying the tension on the thread.

Wrap striping or patterning mechanism in knitting machines. Frederick E. Deans & Carlyle H. Wainwright (to The Bentley Eng. Co., Ltd.). USP 2 463 751, Mar. 8, 1949.

In a knitting machine having a relatively displaceable needle bed and including a group of needles capable of selection to take a wrap thread, a wrap striping or patterning mechanism comprises at least one wrap finger having relative wrapping travel past the group, means for advancing the finger at the plain side of the group, means for moving it outwards across the needle line to the hook side thereof, an abutment for engaging the projected finger and for locating it with respect to the needle-operating means while its relative travel at the hook side of the group is effected at the same speed as the aforesaid relative displacement, and means for moving the finger back across the needle line after it has been carried past the group. (See also USP 2 466 933 above).

Yarn carrier stop motion. Edw. Vossen (to Stop-Motion Devices Corp.). USP 2 451 133, Oct. 12, 1948.

The stop motion of this invention is particularly useful on knitting machines which do knitting in which certain threads alternately stop and start knitting during the knitting operation. This invention proposes to shorten the arms of the yarn carrier stop motions to correspondingly shorten the fly-wire switch operators, and then in order to take up the large amount of slack in the yarn, and to construct the fly-wires and the yarn guiding elements on the arms so that each fly-wire draws more than one loop of the thread. With this arrangement the stop motion device is capable of taking up all of the slack and holding the yarn in a position in which it will not become entangled, resulting in a great saving of yarn.

Special fabrics C 4

Fabric for the manufacture of rainproof garments. Edwin E. Raymond. USP 2 466 911, Apr. 12, 1949.

A waterproof fabric comprises an upper layer of a resilient plastic or rubberlike material and a lower layer of any desired woven material treated with a water repellent. The upper layer is provided with perforations almost microscopic in size and spaced approximately 100 to the sq. in. Any discrete droplets of water that may pass through

the perforations will evaporate before penetrating the lower fabric. The free passage of air, however, is unimpeded.

Fibrous glass article. Martin E. Nordberg (to Fiberglas Canada Ltd.). Can. P. 447 277, Mar. 16, 1948.

A method of making an article composed of refractory glass fibers comprises melting a glass consisting of silica, alkali metal oxide and zirconium oxide, the total alkali metal oxide being not less than about 25% and the zirconium oxide being not more than about 15%, forming the glass into fibers having a diameter not exceeding about .001 in., fabricating the fibers into an interlaced arrangement to form a fabric, leaching the fabric with an acid solution to extract non-siliceous constituents and leave a porous highly siliceous residue, and baking the leached fabric at a temperature sufficient to cause sintering thereof.

Lace web separation. John Spalding. USP 2 468 310, Apr. 26, 1949

This invention provides a process of separating into strips a lace web of the type in which lace strips are connected edge to edge by threads of a composition having low tensile strength when heated; the process includes the steps of applying to the web a sheet having a coating of adhesive material, and heating the web to cause contracting and breaking of the connecting threads and the adhering of the residual portions of the broken threads to the sheet.

Macerated cloth-resin-metal composition. Crane Packing Co. Australian P. 131 970, Apr. 30, 1946).

A composition for use in the production of anti-frictional material is made by mixing into a paste a thermosetting potentially reactive resin in liquid form with a metal powder having a different specific gravity. then adding macerated cloth impregnated with a resin of the above type to the paste under heat and pressure until the fibrous material is uniformly coated with paste, the heating being limited so that the resin is in a suitable state for subsequent molding. The anti-frictional material is produced by including graphite in the composition, and anti-friction machine elements may be formed from the material.

Method and apparatus for flocking fabric. Theodore Lindquist (to United Merchants & Mfrs., Inc.). USP 2 464 453, Mar. 15, 1949.

A flock coating mechanism makes possible 2-tone effects with but a single color of flock by varying

the density of the flock in certain areas. This is achieved by distorting the base fabric by means of rollers on which are protuberances that cause undulations in the fabric as it passes through the electrostatic field.

Method and apparatus for forming fibrous webs. Emery P. Miller (to Ransburg Electro-Coating Corp.). USP 2 466 906, Apr. 12, 1949.

In the method of manufacturing matting, the improvement which consists of electro-statically mixing fibrous particles and binding particles and thereafter subjecting the mixed particles to an electrostatic field for forming them into a matting.

Method of making all-textile elastic fabric. Boutwell H. Foster (to Dominion Rubber Co. Ltd.). Can. P. 447 274, Mar. 16, 1948.

A method of making an elastic fabric having a substantial stretch and the soft feel of a terry fabric when contracted consists in introducing in the fabric as it is woven a substantial number of helically coiled high-twist fibrous yarns while these yarns are dry and extended to an approximate straight condition, then thoroughly wetting the fabric while it is free of tension so that the coiled yarns will assume the form of contracted helices that contribute to the softness of the fabric and hold it yieldingly in the contracted condition.

Non-woven filler for laminates. Anon. *Modern Plastics 26*, 70-1 (May 1949).

The properties and uses of Lantuck, a new bonded fabric recently introduced by the West Point Mfg. Co., are described. Almost completely random distribution of fibers in Lantuck give it equal strength in all directions. Used as fillers in high- and low-pressure laminates and coated fabrics. Lantuck fabrics are made at present in 6 standard styles, each different in fiber structure and each bonded with different percentages (5-35%) of different synthetic resins, depending on the final application.

Pad or cloth for polishing. Fredrick Hyer. Can. P. 445 563, Dec. 16, 1947.

This invention provides a cleaning and polishing pad made of closely woven fabric and a filling therefor, comprising an abrasive of finely comminuted clam or oyster shells.

Pile fabrics. Issum & Fuhrhop. Indian P. 39 505 (through *J. Sci. Ind. Research (India)*).

Pile rug. John J. Matwin & John E. Taylor (to Belrug Mill, Inc.). USP 2 466 857, Apr. 12, 1949.

A rug or the like, comprises a back including alternately arranged pairs of tight warps and pairs of slack warps and filling threads interwoven with the pairs of tight warps and the pairs of slack warps, and generally W-shaped tufts, each of which includes a pair of threads. The generally W-shaped tufts are arranged in longitudinal rows, a longitudinal row being disposed between the warps in each pair of tight warps, and also arranged in traverse rows, the tufts in each traverse row being carried by a group of 3 filling threads and passing outwardly of and about the outer filling threads in the group and inwardly of and about the intermediate filling thread in the group, the groups being spaced, and a single filling thread arranged between adjacent groups and between the adjacent transverse rows of tufts.

Process and apparatus for the construction and designing of materials formed from colored yarns. D. M. Cooper & H. Blackburn. French P. 932 200. Nov. 11, 1947 (through *Bull. de L'Institut Textile*).

The device consists of a frame and small blocks made of or covered with fibers, yarns, or fabrics which can be assembled in the desired order to facilitate the creation of new designs. An optical instrument is used to examine the patterns.

Ribbon. Wm. Whitehead (to Celanese Corp. of Am.). USP 2 467 449, Apr. 19, 1949.

Ribbons to be used in typewriters and the like are woven of high-tenacity regenerated cellulose yarns. These yarns are formed by stretching and then saponifying yarns having a basis of an organic acid ester of cellulose. The ribbons, after weaving, are subjected to a shrinkage treatment using an aqueous solution of an alkali metal hydroxide and are then impregnated with an inking composition.

Sliding fastener stringer tapes. Lightning Fasteners Ltd. & Brit. Nylon Spinners Ltd. Australian P. 131 943, May 30, 1946.

To minimize the wearing effect of the slider, the tapes have a higher strength in the weft direction than in the warp direction. A major portion of the weft threads and none, or only a small proportion, of the warp threads consist of, or contain, threads of synthetic material which are stronger and more resistant to abrasion than cotton threads.

Textile fibrous product. Carleton S. Francis, Jr. (to Am. Viscose Corp.). USP 2 464 301, Mar. 15, 1949.

In one embodiment of this invention, a pile fabric is formed by depositing a flock comprising a mixture of potentially adhesive fibers with others of different nature upon a base fabric carrying an adhesive coating. Subsequent to the setting of such adhesive, the pile fabric thus formed may be subjected to an activating agent and pressure to impart novel decorative effects resulting from the adhesion of fibers in the pile. In another embodiment of the invention a mass of fibers comprising the potentially adhesive fibers may be formed by carding or by deposition from a fluid suspension thereof onto a moving band, or by any other system into felt-like or paper-like structures, and thereafter such structures may be activated in selected portions thereof to render the potentially adhesive fibers tacky or adhesive in those areas. Such activation may be accompanied by pressure, preferably applied at the portions in which activation is effected. Besides the possibility of obtaining decorative effects when pressure is utilized, the utilization of selective activation, with or without pressure is accompanied by valuable advantages in respect to the structure of the products.

Treated cotton fabrics: ion exchange materials. C. L. Hoffpauir & J. D. Guthrie. *J. Bio. Chem. 178,* 207-12 (Mar. 1949).

Preparation of oil seed proteins very low in ash and phosphorus may be obtained by the alternate use of aminized cotton fabric and phosphorylated cotton fabric until deionization is almost complete prior to separation of protein curd.

True glass curtains firesafe and durable. Anon. *Purchasing 26,* 230 (Mar. 1949).

A true glass curtain—firesafe, durable, cleanable and with excellent draping qualities, is now available for institutions, hotels, hospitals, and so on as the result of the Coronizing process for the treatment of glass fabrics developed by the Owens-Corning Fiberglas Corporation. The treatment gives the material a soft feel and makes it possible to drape it in attractive folds. In addition to their fire safety, the curtains are shrink-proof. The Fiberglas Corporation is working with weavers on additional fabric constructions, and with finishers on dyeing and printing techniques. It is expected that the service weight marquisette material will be followed by a light-weight, sheer marquisette, and that gradually there will be developed a complete line of dyed and printed Coronized drapery fabrics.

STANDARD FINISHING D

Affinity of water soluble substances to wool and its antibacterial activity. R. Fischer, S. Seidenberg & U. P. Weis. *Helv. Chim. Acta 32,* 8-17 (1949).

The existence of certain similarities between wool and bacteria could be established. On the basis of these similarities the affinity of various wetting agents, detergents, moth preventives, and disinfectants to wool has been determined, and their antibacterial activity has also been tested. Correlations between affinity of these substances to wool and their anti-bacterial activity has been found to exist. The possibilities resulting from these phenomena are outlined in connection with the interpretation of the correlations.

Basic detergents: surface activity and detergent effect. K. Lindner. *Melliend Textilber. 29,* 203-09 (June, 1948).

Behavior of surface activity of 27 basic detergents is investigated. It is asserted that the so called dirt carrying property (or protective colloid action) as well as the surface activity are of great importance for the effect of basic detergents. Results of measurements are presented in the form of graphs and technical detergent properties are evaluated.

Bleaching process. Mathieson Alkali Works. French P. 928 932, June 16, 1947. (Through *Bull. de L'Institut Textile*).

A number of materials, including acetate rayon and nylon, may be bleached with a chlorite in aqueous solution in the presence of aldehyde. The pH is maintained at approximately 7.

Comparative efficiencies of wetting agents on woolen cloth. Kermit S. LaFleur, Farnsworth Mill. *Am. Dyestuff Reptr. 38,* 367-8 (May 2, 1949).

The comparative wool-wetting efficiences of commercial wetting agents and allied products which lower the surface tension of water were determined and expressed both in terms of cost and concentration. When arranged in order of performance on an equal concentration basis, dioctyl sodium sulfo succinate was found to be most effective, and sodium rosinate the least effective of the types tested; while certain non-ionic condensates (polyethylene ethers), sodium salts of secondary alcohol sulfates, alkyl and alkyl aryl sulfonates (petroleum and coal tar derivatives), primary alcohol sulfates, and fatty acid amide and ester sulfonates show intermediate effectiveness in that order. These results supplement and appear to be in accord with previously published data.

Effect of pH when bleaching with hydrogen peroxide. Quebec CATCC's "Question of the Month." *Can. Textile J. 66*, 46, 48 (Apr. 15, 1949).

This is a discussion of the major factors, including equipment, water, fiber, alkali, pH and temperature, affecting the stability of hydrogen peroxide bleach baths.

Evaluation of enzymatic desizing agents. E. Schubert. *Textil-Rundschau 3*, 295-304 (Sept.-Oct. 1948) (through *Bull. de L'Institut Textile*).

All analytical methods for determining the effectiveness of desizing agents are of no value, and the material can be tested only by means of a practical desizing test. These tests are not in agreement with the analytical data.

Fundamentals of automatic control in textile drying. Leo Walter. *Textile Mfr. 75*, 228-31 (May 1949).

The three main factors which influence control of a dryer are: (1) temperature, (2) humidity, and (3) speed, and each factor in itself is a "process variable."

How to avoid creases in processing acetate rayons. *Silk & Rayon J. 34*, 539, 544 (Apr. 1949).

The influence of thermo-plasticity, wetting-out resistance and swelling is considered.

Improved detergents may solve many problems of textile processing. *Brit. Rayon & Silk J. 26*, 66 (Mar. 1949).

A review is given of Dr. E. S. Paice's lecture on detergents delivered to the Lancashire section of the Textile Institute. Dr. Paice discussed the nature of surface active molecules, the chemical nature of detergents and their industrial applications.

Low temperature wool piece goods scouring with a synthetic organic detergent—laboratory evaluation. O. M. Morgan & J. E. Walter, Natl. Aniline Div., Allied Chem. & Dye Corp. *Am. Dyestuff Reptr. 38*, 374-7 (May 2, 1949).

Wool piece goods containing mineral oil lubricants may be scoured over a wide temperature range with "Nacconol" NR and suitable salts, such as sodium chloride or sodium bicarbonate. Although the quantities of supplies needed are larger at the lower scouring temperatures an over-all economy may be effected when savings in steam, time and labor are considered.

Method and apparatus for handling tubular knitted fabric. Jules G. Walter & Saml. Cohn (to Sam-

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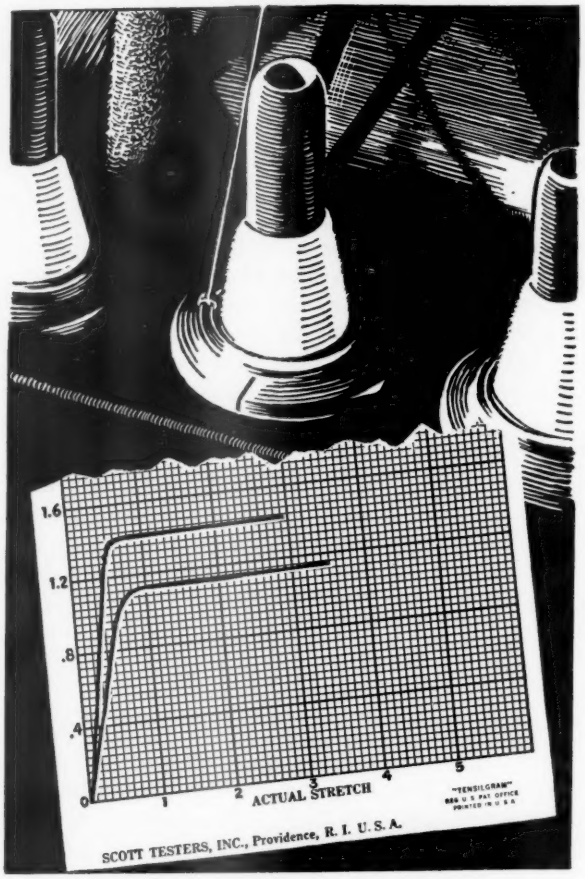

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coe Holding Corp.). USP 2 467 281, Apr. 12, 1949.

A method and apparatus for modifying flattened tubular fabrics to bring stripes or patterns into register comprises advancing the flattened fabric continuously while maintaining tension on the fabric, slitting the fabric at one side to provide separated edges, causing one layer of the fabric to follow an elongated path with reference to the path of the opposing layer to bring the design on the separated edges into register, uncurling and aligning the edges of the fabric, trimming the uncurled edges, and sewing the separated edges to restore the fabric to tubular form.

Notes on the influence of tension in textile processing. Anon. *Textile Mfr. 75*, 232-34 (May 1949).

Tension in the early and later stages of the processing of yarns and fabrics influences the quality of the finished products.

Preparation of solutions or dispersions of cellulose and their application in textile sizing, finishing, dyeing and printing. RAO. Indian P. 39 202 (through *J. Sci. Ind. Research (India)*).

Textile is sized, finished or dyed with a solution or dispersion of cellulose activated by metallic catalyst.

Problems in wool goods finishing. Jas. Linton, Hart Products Co. of Canada Ltd. *Can. Textile J. 66*, 52, 54, 56, 58 (Apr. 15, 1949).

Problems which continually arise in finishing woolen piece goods are discussed and suggestions for possible remedies and methods of prevention are given.

Shorter method of bleaching linen textiles. N. N. Kouzoub & P. W. Moriganov. *Tekstilnaia Promichlennoste 8*, 30-2 (Nov. 1948). (Through *Bull. de L'Institut Textile*).

Two bleaching processes are outlined, each of which are based on 5 operations, with the use of caustic soda, sodium hypochlorite, silica and soda, at the boiling point. Bleaching can be done more rapidly, operating on materials which suffered a decrease in strength of 30-35% when bleached by other processes.

Soap or synthetic? Dewey H. Palmer, Hospital Bur. of Standards and Supplies. *Standardization 20*, 130-2 (May, 1949).

The classification of soaps as to type is reviewed, and standards applicable to soaps are tabulated. The rapid expansion of synthetic detergents, particularly in hard-water areas, is noted, and their variations in effectiveness with type of service is pointed out. Despite the fact that ingredients or technical analyses furnish no reliable standards, methods are now available for actual washing tests which should permit the writing of true and satisfactory performance standards for all major types of detergents.

Some defects arising in the finishing of woolen and worsted fabrics. C. S. Whewell. *J. Soc. Dyers Colourists 65*, 9-14 (Jan. 1949).

Defects originating in storage, in perching and mending, in the setting processes, in scouring, milling, drying, raising and finishing are discussed.

Static electricity in a tentering machine. D. R. H. Williams. *Textile Mfr. 75*, 209-10 (May 1949).

Static electricity has been a problem in the textile industry for many years; this article gives details of a simple, inexpensive method which works admirably on a tentering machine.

Stopping mechanism for textile apparatus. Geo. H. Cady & Edw. W. Adams (to Cranston Print Works Co.). USP 2 452 223, Oct. 26, 1948.

A stopping mechanism is provided that is adapted to be employed in connection with the scutcher, or in advance of one or a series of finishing machines. The device stops the feeding of the fabric and the operation of a machine when it detects a fold, crease. or foreign matter.

Web guiding device, particularly for tentering frames. August Künzle (to Heberlein Patent Corp.). USP 2 451 343, Oct. 12, 1948.

Cloth passing over a tenter frame is held in the proper alignment by means of rotatable guide-rollers and a photo-electric cell.

DYEING AND PRINTING E

Application of chrome dyes to nylon textiles. H. R. Hadfield & D. N. Sharing. *J. Soc. Dyers Colourists 64*, 381-6 (Dec. 1948).

A laboratory study of the behavior of chrome dyes on nylon textiles is described. Sufficient experimental evidence has been obtained to provide a general picture of the mechanism governing their application. This included measurement of the absorption of potassium dichromate by undyed nylon and by nylon dyed with chrome dyes. By measurement of the reflectance curves of chrome-dyed nylon the rate of formation of the chromium complex within the nylon has been determined. Evidence has been obtained which sug-

gests that the groups in nylon responsible for the absorption of dye are responsible also for the absorption of dichromate ions. In heavy dyeings, where these groups are practically saturated by the dye, the absorption of dichromate is partly effected by reduction of the dichromate within the nylon by formic acid, a reaction which produces further absorption of dichromate due to the alteration in charge from the dichromate anion to the chromic cation. This reduction mechanism appears to be catalyzed by the dye. The various methods of dyeing nylon with chrome dyes are critically discussed, and recommendations are made for the application of these dyes to nylon textiles.

Chemical microscopy in dyeing and finishing. G. L. Royer. *Anal. Chem. 21,* 442-47 (Apr. 1949).

The microscope has been of considerable value in the textile field. Its earlier use in the identification of textile fibers has been expanded through the application of chemical microscopy, in which analytical and physiochemical aspects of textile manufacture have been studied with the aid of the microscope.

Diffusion of dyes in cellulose. T. H. Morton. *Textil-Rundschau 4,* 39-40 (Feb. 1949).

A comprehensive review of the work done chiefly in England on the diffusion of dyes in cellulose with the purpose of giving an insight into the dyeing process.

Diffusion of direct dyes into cellulose. II—The interpretation of rate of dyeing measurements. J. Crank. *J. Soc. Dyers Colourists 64,* 386-93 (Dec. 1948).

Earlier work on the measurement of the diffusion coefficient for direct dyes into cellulose sheet is discussed. The variation of this coefficient with dye concentration is considered, and a suggestion is made for improving the accuracy of the results by adopting a different method of mathematical analysis. Some recently developed mathematical solutions of the diffusion equation for conditions corresponding to those of the commercial dyebath are shown to lead to calculated rate-of-dyeing curves which are examined, dyeing from a finite dye-bath, e.g., one showing 90% exhaustion. is better represented by the mathematical solution for an infinite dyebath than by the solution actually corresponding to 90% of the problem which was previously neglected in deriving the mathematical solutions. Further experimental data are necessary before the explanation can be adequately tested.

Dyeing

Dyeing and finishing works: Heat conservation. D. M. Yuill. *Hosiery Times 21,* 39-42 (1948). (Through *J. Textile Inst. 40,* A69 (1949)).

Lecture to the Scottish Section of the Institute of Fuel, describing experiments on steam generation and utilization carried out at Abbey Meadow Mills, Leicester (Wolsey Ltd.). The whole of the energy degradation from process steam could be utilized by passing the steam through a turbo-generator run in parallel with the public supply, thus using the grid system as a "balancer." The question is discussed of heat loss in dyeing; a closed heating coil can make better use of the heat when ebullition is necessary.

Dyeing of nylon fibers. Jas. H. MacGregor (to Courtaulds Ltd.). Can. P. 445 739, Dec. 23, 1947.

This invention provides a process of dyeing with a direct cotton dyestuff in an acid bath, nylon fibers containing a water-soluble condensation product of formaldehyde with a cyanamide compound from the group consisting of cyanamide and derivatives thereof.

Dyeing of nylon-wool blends. R. P. S. Black, E. I. du Pont de Nemours & Co., Inc. *Can. Textile J. 66,* 44-6 (Apr. 15, 1949).

The best results are obtained with the neutral dyeing acid colors. The operation is started at the neutral point or slightly above, raised to temperature slowly and dyeing continued for one and ½ hrs. As little acid as possible is added for exhaustion. Level dyeing acid colors are probably next in importance, where fastness requirements are not too stringent. Care must be used in selecting those dyes which are compatible, that is, exert no blocking effect, and dyeing is best carried out with an organic acid. Chrome colors give the ultimate in wet fastness properties. They are generally difficult to apply due to difference in degree of chroming on the nylon and wool. Stock dyeing appears to be a more logical approach. Chromacyl colors give satisfactory unions where sulfuric acid is used in the dyebath but, due to the degrading effect on the nylon component, such a process is not generally recommended.

Dyeing of textile fibers containing nitrogen. Jas. H. MacGregor (to Courtaulds Ltd.). Can. P. 445 737, Dec. 23, 1947.

A process of dyeing nitrogenous textile fibers comprises pretreating the fibers with an aqueous solution of a water-soluble compound selected

from the class consisting of cyanamide, dicyandiamide, melamine, dicyandiamidinie, guanidine, biguanide, substituted dicyandiamidines, guanidines, and biguanides in the presence of a small quantity of a free acid, and then dyeing with a direct cotton dyestuff from a neutral bath.

Effect of metals on tippy dyeing. Henry E. Millson, Am. Cyanamid Co. *Am. Dyestuff Reptr. 38*, 378-92 (May 2, 1949).

The present study was concerned chiefly with the effect of metals on the deposition and distribution of dye within the individual fibers. The distribution of trace metals in the fiber was determined by cross-sections and other microscopical studies. The rate and extent of metallization by various metals were studied by means of the spectrophotometer. It was observed that the presence of metals in the dye bath is an important factor in 2 of the major dyeing difficulties. It may not only cause the wool to dye tippy, but it may also frequently be the reason for undesirable color changes during the dyeing procedure. It was also observed that the extent of damages in a staple or part of the fleece varies considerably, depending upon its original location in the fleece.

Importance of pH control. Jos. L. Wauters. *Knitter 13*, 88, 90-1 (Apr. 1949).

This discussion of pH control treats briefly determination of pH and its control in the scouring, bleaching, dyeing, and finishing of hosiery.

Improvement in the heating of dye vats. Clermont-Bonte & Fils. French P. 927 182, Apr. 28, 1947. (Through *Bull. de L'Institut Textile*).

A compartment in communication with the dye bath is heated by means of a coil through which a heating fluid is passed and the dye liquor is circulated through this compartment by means of a pump.

Investigation into the practical aspects of the adsorption of acid and chrome dyes by wool. G. H. Lister. *J. Soc. Dyers Colourists 65*, 97-106 (Mar. 1949).

This is an account of investigations which were undertaken (a) to find a more satisfactory method of assessing the dyeing and levelling properties of acid and chrome dyes than at present in use; (b) to investigate the effect of changes in dye-bath conditions on the dyeing process; (c) to assist the practical dyer in the control of processing, and ultimately in the choice of suitable dyes for use together in compound shades.

Pigment-dyeing of fabrics. Interchemical Corp. Indian P. 37 174 (through *J. Sci. Ind. Research (India)*).

Process for dyeing cloth and means of operating. Julien Dungler. French P. 931 129, Sept. 22, 1947. (Through *Bull. de L'Institut Textile*).

All kinds of fabrics can be dyed without tension by passing it through 2 intake rollers and then between 2 endless belts which move at a lower speed than the intake rollers. It is then passed under a series of pipes which project the dye liquor under pressure against the surface of the cloth. These pipes are made telescopic so that they can be adjusted to different lengths of cloth.

Spectrophotometer as an aid to dyeing. Frederick T. Simon. *Can. Textile J. 66*, 48-50, 52-4 (Apr. 29, 1949).

This is the full text of this paper, a summary of which appeared in *Can. Textile J.*, Mar. 18, 1949, with the comments and discussion of a number of other users of the spectrophotometer. (See TTD: *6*, 475).

Printing

Dyes and their use in printing cellulose fabrics. P. Hoton. *Rayonne 4*, 75-83 (Dec. 1948). (Through *Bull. de L'Institut Textile*).

The method of increasing the affinity of cellulosic fibers for dyes is outlined, and procedures for resist print and background coloring with basic dyes are discussed. It is also specified how the impermeability of the resists and the resistance of the shades to water may be increased.

Process for printing with sulfuric esters of leuco vat dyestuffs. Wm. B. Hardy & Elizabeth M. Hardy (to Am. Cyanamid Co.). USP 2 466 656, Apr. 5, 1949.

Difficultly oxidizable sulfuric ester salts of leuco vat dyes of the indigoid type may be printed by using dichromates and an accelerator selected from the group of sulfonic acids and their water-soluble salts. The color is developed by subjecting the print to the action of acid vapors.

Short ageing processes for printing wool, silk and synthetics. A. K. Saville. *Textile Mfr. 75*, 243-45 (May 1949).

New developments in short ageing processes which offer the fastness and color value of older cottage steaming methods produced more economically in a rapid ager or tower ager are discussed.

SILK-SCREEN PROCESS PRODUCTION. H. L. Hiett &

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This volume contains numerous diagrammatic sketches and illustrations of actual manipulative methods.

SPECIAL FINISHING F

Book may be judged by its cover. Anon. *Rohm & Haas Reptr. 7*, 4-7 (Apr. 1949).

The properties of pyroxylin coatings for book cloth are described briefly and the work of the L. E. Carpenter Co., Wharton, N. J., in developing pyroxylin coatings is noted. The production of pyroxylin coated book-cloths is described briefly.

Fibrous cellulosic material. Wm. E. Hanford (to Can. Industries Ltd.). Can. P. 447 234, Mar. 16, 1948.

A process for rendering textile material water-repellent comprises impregnating said material with an ethenone containing an open chain hydrocarbon radical having at least 6 C atoms and baking the impregnated material until water-repellency is obtained.

Field tests of uniforms impregnated with mite toxicants. I. Protection studies. H. F. Cross & F. M. Snyder. *J. Econ Entomol. 41*, 936-40 (Dec. 1948).

In search for chemicals more resistant to washing than benzyl benzoate, the material adopted as a standard by the Army for impregnating uniforms to prevent attachment by mites, the following materials were found to be especially promising: Benzil, 2-thenyl benzoate, p-cresyl benzoate, diphenyl carbonate, and 2-thenyl salicylate. Diphenyl carbonate and 2-thenyl salicylate gave complete protection and benzil and p-cresyl benzoate gave a high degree of partial protection through more washings than the other materials. Diphenyl carbonate gave complete protection and benzil and 2-thenyl salicylate gave a high degree of protection through more days of ageing than the other materials. 2-thenyl benzoate was less effective in washing tests, but in ageing tests afforded a high degree of protection over a longer period of time than diphenyl carbonate or p-cresyl benzoate.

Field tests of uniforms impregnated with mite toxicants. Part II, Stopping-time studies. F. M. Snyder & H. F. Cross. *J. Econ. Entomol. 41*, 940-41 (Dec. 1948).

It is concluded from these data that some correlation exists between stopping times and protection, but that no definite limit of time can be set for all materials on the basis of these tests. If stopping times are 15 min. or less, protection of 90% or more may be expected, but when stopping times are greater than 15 min. protection ranging from 0 to 100% may be expected.

Fire-resistant organic fibrous materials containing ethylene diamine di-hydrobromide. Alexander J. Wesson & Henry C. Olpin (to Celanese Corp. of Am.). USP 2 464 360, Mar. 15, 1949.

The fire-resistance of fibrous materials having a basis of cellulose acetate or other organic fiber-forming substance can be very substantially increased by the application to the material of hydrohalide salts of aliphatic polyamines (including diamines) and especially di-hydrobromide of ethylene diamine. This salt is substantially neutral to litmus and can be rendered quite neutral by the addition of a small excess of the diamine. The salts employed are water-soluble and the fireproofing treatment of the invention can be very simply carried out by applying an aqueous solution of the salt to the material, removing excess of solution and drying. The treatment of the invention can usefully be applied, for example, to rugs, heavy curtains (such as not normally laundered), upholstery-fabrics, mattress-ticking and filling, eiderdown covers and filling, and theater furnishings, and in general to textile and other fibrous materials where fastness to washing is not required.

Fireproofing compositions. Kenneth S. Campbell & Jack E. Sands (to U. S. of Am.). USP 2 462 803, Feb. 22, 1949.

A fireproofing composition suitable for application to a wide variety of textiles comprises chlorinated paraffin wax, a water-soluble urea-formaldehyde condensation product, an antimony oxide, emulsified in water with an emulsifying agent. The process of applying the composition is also claimed.

Latex and fibers. W. H. Stevens. *Brit. Rayon & Silk J. 26*, 59, 65 (Mar. 1949); *Silk J. Rayon World 25*, 64-5 (Feb. 1949).

This is a discussion of the applications of latex in conjunction with fibers. Included are latex-impregnated, latex-coated and latex-bonded fibers. Recipes for the coating of fabrics with heavy deposits of rubber are given.

Method of coating fabric with a modified halo-

prene composition. Robt. M. MacDonald & Henry S. Rothrock (to E. I. du Pont de Nemours & Co.). USP 2 465 336, Mar. 29, 1949.

This invention provides for preparing coated fabrics whereby a butadiene plastic polymer, zinc and magnesium oxides, calcium carbonate and pigments are milled together and the compositions treated with 68% chlorinated polyethylene and a suitable solvent. The above mixture is applied to the fabric and vulcanized by heating for 2 hrs. at 260°F.

Method of treating wool. Daniel Frishman & Milton Harris (to Harris Research Laboratories). USP 2 466 695, Apr. 12, 1949.

A method for treating woolen materials in all forms and constructions which renders the materials resistant to shrinking without deleteriously affecting the desirable properties of the wool comprises treating the woolen materials with a hypochlorite solution containing from about 1% to 6% available chlorine at a pH of about 7.5 to 9 and at a temperature not exceeding 35°C. The oxidation agent is then eliminated from the material by contacting the wool with an excess of an antichlor or by thoroughly rinsing with water.

Permanent finishes on viscose rayon depending on cross-winding. W. G. Cameron & T. H. Morton. *J. Soc. Dyers & Colourists 64,* 329-36 (Oct. 1948).

Evidence is presented which demonstrates the existence of cross-bonds in the molecular structure of 9 modified viscose rayons. In a resin treatment, e.g., the urea-formaldehyde anti-crease process, the greater part of the material is deposited between the molecules of cellulose in the amorphous regions of the fiber. The change in fiber properties, however, is due mainly to a much smaller amount of reactant actively cross-bonding adjacent molecules. In technically important modifications of viscose rayon there is one cross-bond to each 40-100 glucose residues of the fiber cellulose. In the majority of instances the behavior of the cross-bonds can be adequately represented by definite structural formulas. The cross-bonds studied differ widely in stability, and the technical importance of this point is indicated. The technical processes depending on cross-bonding are reviewed, and the anti-crease process is discussed.

Process for rendering cellulosic textile material transparent and products therefrom. Ernst Weiss (to Heberlein Patent Corp.). USP 2 466 066, Apr. 5, 1949.

A fabric, woven from the group consisting of continuous filamentary rayon, spun rayon, and cotton and containing 45 to 130 threads per in. in warp and weft, may be made transparent by impregnating the fabric with a resin ether which contains 10 to 80% of water-insoluble ether resin, and heating to render the material transparent. A transparent printed design may be produced by impregnating the fabric with the ether resin in the form of a design. It is claimed that fluid-permeable interstices remain in the fabric.

Recent progress in the production of shrink-resistant wool. S. Borsten. *Teintex 13,* 165-71, 194-99 (1948).

Recently published work on the structure of wool and the theory of felting is discussed, and modern shrink-resistant processes for wool are described together with patent references. Chemical methods of producing shrink-resistant wool are classified under the following headings—(1) Oxidation processes comprising the use of chlorine (wet and dry chlorine and chlorine compounds dissolved in organic solvents), permanganate, and peroxides. (2) Hydrolysis (alkalies and enzymes). (3) Reduction (sulfites, bisulfites, thiols, and thioglycollic acid). (4) Synthetic resins (melamine resins for the Resloom and Lanaset processes, polymers of ethylene sulfide, vinyl or acrylic compounds, inorganic polymers of silicon compounds, and derivatives of m-phenylene diisocyanate).

Semistiff collar. Dorman McBurney (to E. I. du Pont de Nemours & Co.). USP 2 467 438, Apr. 19, 1949.

This invention provides a process for stiffening cotton fabrics by coating the fabric with a composition containing polyvinyl chloride resin, titanium dioxide pigment, and dioctyl phthalate and heating the coating.

Textile material of high strength. Robt. W. Moncrieff & Henry H. Holmes (to Henry Dreyfus). Can. P. 445 662, Dec. 16, 1947.

A process for the production of textile materials having high dry and wet strength comprises subjecting linen material to the action of a solution of a fatty acid of molecular weight at least 200 and the anhydride of a lower fatty acid or a substituted lower fatty acid under conditions such that the weight of the material is increased as a result of esterification by between 1% and 5%, and that the esterified groups are distributed substantially uniformly throughout the material.

Textile material treatment. Geo. W. Seymour &

Geo. C. Ward (to Camille Dreyfus). Can. P. 445 661, Dec. 16, 1947.

This invention provides a process for the production of novel textile materials having a basis of cellulose acetate, which comprises subjecting the textile material to the action of a relatively concentrated solution of sodium hydroxide containing an inorganic salt having an inhibiting effect on the normally swelling action of the sodium hydroxide on the cellulose acetate material, drying the wet material rapidly, directly followed by rinsing the dried material in water until neutral, and then drying the material, whereby a textile material having improved resistance to glazing and having selective dyeing characteristics is obtained.

Textile treatment with alkali-zincate solutions of cellulose ethers. Sidney M. Edelstein. USP 2 465 520, Mar. 29, 1949.

A method of treating a textile material comprises applying to the textile material a solution of a cellulose ether in an aqueous solution of an alkali metal zincate so as to form a film of solution on the material, precipitating cellulose ether from the film upon the textile material by applying thereto a solution of sodium hydroxide of mercerizing strength, and washing and drying the product.

Treatment of wool and products therefor. John B. Rust (to Montclair Research Corp.). USP 2 467 233, Apr. 12, 1949.

A shrinkproofing treatment for wool and wool-containing fibers which retains the desirable hand and wearing qualities of the material and improves their draping qualities is provided. The wool material is treated in a bath consisting of a synthetic butadiene-1.3 polymer of 100% polymerization. The bath also contains a non-cationic emulsifying agent, a water-soluble neutral salt of an alkali metal, and a curing catalyst for the resin.

TESTING AND MEASUREMENT G

Does "textile standardization" mean product limitation? D. E. Douty, U. S. Testing Co. *Standardization 20*, 128-9 (May 1949).

Textile standardization, as attempted in the United States, does not in any way limit the variety of fabric manufactured. Rather, it consists of developing a system of standard definitions of terms and testing methods, including instruments, apparatus, and substances used in the tests, and of developing specifications from which to predict the utility and serviceability of textile materials.

The American Standards Association now has 48 such standards, and has recommended them to the International Organization for Standardization (ISO). When the ISO finally completes its program and arrives at international textile standards, the result should be a much closer approach to a world market of free competition for textiles than now prevails, coming from a clear international language of terms, definitions, tests, and specifications.

How good are testing methods for consumer-used textiles? Jules Labarthe, Jr., Mellon Inst. of Industrial Research. *Standardization 20*, 56-9 (Mar. 1949).

Of the numerous specifications set up for consumer-used textiles, few actually reflect performance in use. Most such standards are for quality control or purchasing guidance, while store and users' tests are performed on a small number of unused samples. Consumer wants and needs are not clearly known, nor are wants distinguished from needs. New developments in finishes, detergents, etc. make performance in use harder to predict. Though the value of standards in lowering costs and improving quality is well known, a product as simple as sheets was only recently standardized with any satisfaction. A new approach is needed, and the one suggested is a "task committee" of representatives of fabric producer, manufacturer, distributor, and consumer which will be technically competent and will use data from testing organizations, store laboratories and adjustment bureaus, schools, etc. to determine wants and needs in a particular product and to formulate standards which will correctly evaluate the product.

Request standards for rayon fabrics. Anon. *Standardization 20*, 88-9 (Apr. 1949).

The National Retail Dry Goods Association has asked the American Standards Association for the develpment of a series of performance standards which will define the minimum quality of rayon fabrics in terms of their intended use. As a basis for the work, the American Viscose Corp. has made available the data collected in 19 years of testing and certifying rayon under its Crown Tested Plan. These data consist of tests and minimum requirements classified by intended use of the fabric, for such properties as water absorption, retention of moisture, bursting strength, color fastness, laundering, perspiration, permanency of finish, and resistance to seam slippage. American Viscose, while offering the data in the hope that comparable standards can be set up, will

retain ownership if no standard is achieved. The NRDGA has asked that it be named sponsor of the work, which will be made available to buyers when complete. An item accompanying this announcement describes the organization and functions of NRDGA.

Clothing and fabrics G 1

Accelerated ageing tests for textile fabrics. Pauline B. Mack, Penn. State College. *J. Home Econ. 41*, 252-4 (May 1949); *Can. Textile J. 66*, 46, 48 (May 27, 1949).

The work of the Ellen H. Richards Institute, at the Pennsylvania State College, in studying accelerated ageing tests for textile fabrics is described briefly. The work is supported by the American Viscose Corp. through grants-in-aid and includes the development of accelerated units of tests for responses of rayon fabrics to light, heat, laundering, dry cleaning, wet dry cleaning, abrasion, perspiration, gas fading, and combinations of these units. Wearing tests with representative rayon fabrics have been run parallel to the development of new laboratory tests, the former being used as criteria to evaluate the efficacy of the new laboratory tests.

Index of the water-repellency of textiles from the surface tension of aqueous solutions. H. A. Schuyten, J. W. Weaver & J. David Reid, Southern Regional Res. Lab. *Am. Dyestuff Reptr. 38*, 364-6 (May 2, 1949).

A method is described which was devised for indicating the relative surface tensions of solids by determining the surface tension of a standard liquid which will wet the solid under selected conditions. The liquid selected was water containing various amounts of a wetting agent, prepared in such a manner as to obtain a series of solutions with surface tension values ranging from 26 to 72 dynes/cm. The method, called the "Rolling Drop Method," involves the determination of the highest surface tension that will wet the surface of the material being examined, as shown by the leaving of a continuous trail on the surface of the material. The visual determination of this point is difficult, especially when the solutions employed vary in surface tension by only 1 dyne/cm. By using standard solutions which are sufficiently ionic, the closing of an electrical circuit has been utilized to determine the end point. Simpler circuits, could, of course, be employed actuating any visual or audible indicator.

Spectrographic determination of chlorine in textiles. Wm. W. A. Johnson & Daniel P. Norman, New England Spectrochemical Laboratories. *Am. Dyestuff Reptr. 38*, 361-3 (May 2, 1949).

A method is described for the spectrographic determination of small quantities of chlorine in textiles. By the use of chlorine-free aluminum powder mixed with the shredded sample, the emission spectrum of Al chloride could be observed. The mixture of Al and textiles was subjected to an electric discharge at 1 amp. and 1000 v. or more. For a quantity determination of Cl, it is necessary to calibrate the observed brightness of the Al chloride bonds in terms of mg. per sq. in. of fabric. The methods of standarization for occasional determinations and for routine work are given. As little as 5 micrograms of Cl can be detected. Variations in Cl content at intervals as small as 1 cm are possible.

Instruments and instrumentation G 2

Air gauging of textile fibers. Anon. *Textile Mfr. 75*, 226 (May 1949).

Measuring the cross-sectional area of a bundle of textile fibers by means of the air gauge method.

Apparatus for measuring the stiffness of flexible material. R. F. Taber. USP 2 465 180, Mar. 22, 1949.

This patent describes a machine suitable for testing the stiffness of paper, textiles or plastics. The resistance to bending or flexing is measured by the angular displacement of a test strip, held at one end and passing between rollers at the other. The machine is motor driven and is described as being very precise and sensitive.
HAM

Capacitance method of measuring wear. Anon. *Tech. News Bull. Natl. Bur. Standards 33*, 60-2 (May 1949).

The method described for measuring the abrasive wear of textiles is simple, rapid, and highly sensitive, yet non-destructive, in contrast to previous methods depending on thickness, air permeability, light transmission, or breaking strength. Capacitance measurements are made for electrodes at a spacing slightly greater than the cloth thickness under 3 conditions: with air alone between the plates (C_a), with the unabraded cloth (C_o), and with the worn cloth (C_r). The ratio of C_o-C_r to C_o-C_a, expressed as a percentage, is a sensitive measure of destruction, or ruin. Test results may be employed to follow the course of an abrasion test, to plot "isoruin" (constant wear) contours for a tested sample, to check uniformity of textile

specimens, etc. The precision capacitor used is ruggedly built and provided with a guard electrode to improve accuracy, and tests with the method conducted in an air conditioned room correlate well with actual service tests.

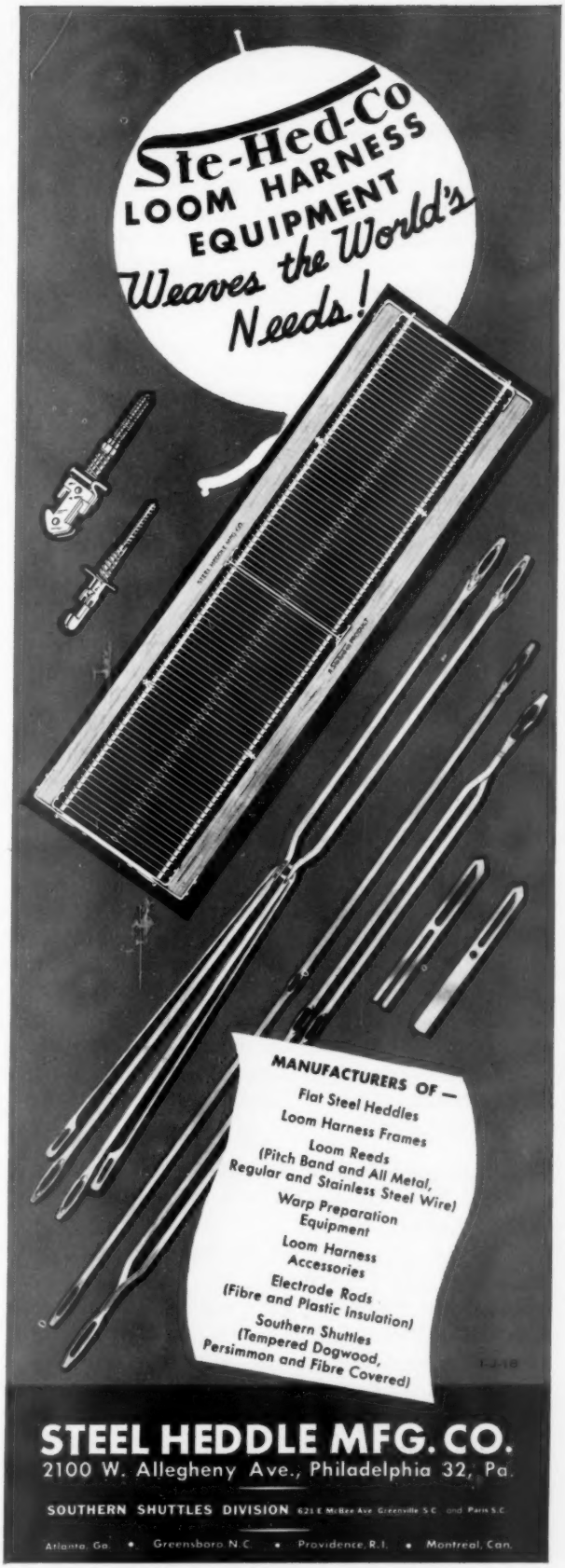
Positive-replica technique for electron microscopy. C. M. Schwartz, A. E. Austin & P. M. Weber, Battelle Memorial Institute. *J. Applied Physics 20*, 202-05 (Feb. 1949).

A positive-replica technique for electron microscopy has been developed which reproduces the contour variations of the specimen surface, and permits direct visual interpretation of elevation. The method utilizes 2 resins, each mutually insoluble in the solvent for the other, specifically, polyvinyl alcohol plus Formvar. Shadow casting of the Formvar positive replica enhances detail and highlights the area in relief in the original surface. Examples are given, in particular, applied to wear-test specimens.

Servo-controlled tensile strength tester. Geo. S. Burr, Instron Eng. Corp. *Electronics 22*, 101-05 (May 1949). **Tensile strength tester.** Anon. *Chem. Eng. News 27*, 942 (Mar. 28, 1949).

Materials ranging from the finest single textile fibers to complex plastics and rubbers can be tested on the Instron tensile strength tester. This device has a weighing system for detecting and recording the tensile load applied to the test sample based upon the use of the bonded-wire type of strain gage. These gages incorporated into interchangeable load cells to cover the prescribed ranges are arranged in a Wheatstone bridge circuit, the output of which is amplified to operate a Leeds and Northrup Speedomax recorder. The pulling jaw is mounted on a moving crosshead motivated by 2 vertical drive screws and an amplidyne-controlled positional servomechanism. The chart of the recorder is driven synchronously at various speed ratios with respect to the crosshead, so that load-elongation diagrams may be obtained with a wide choice of scale factors for both load and extension. Full scale load sensitivities extend from 2 g to 5,000 lbs; each removable load cell incorporates as much as 50 to 1 choice of ranges. Details of the circuits employed are given and illustrated by circuit diagrams.

Use of a trellis model in the mechanics of homogeneous materials. K. Weissenberg. *J. Textile Inst. 40*, T89-110 (Feb. 1949); **Trellis model for the application and study of simple pulls in textile materials.** G. E. Chadwick, S. A. Shorter & K. Weissenberg. *J. Textile Inst. 40*, T111-



60 (Feb. 1949); **Homogeneous strain and the trellis model.** S. A. Shorter. *J. Textile Inst. 40*, T228-40 (Mar. 1949).

These 3 articles treat of different aspects of the same subject, i.e., the use of a "trellis" to obtain homogeneous strains in fabrics or other flat sheets, and how to measure such strains, and corresponding stresses. The method is of interest in testing fabrics in that it allows breaking strength and elongation tests to be made without distortion of the fabric through the "waisting" effect, common to all tensile strength tests for fabrics. The method consists essentially in determining the motion of the different parts of a fabric under stress, and then determining what motion would have to obtain for "homogeneous strain" throughout the test specimen. The specimen is then gripped in a "trellis," either from 2 or 4 sides, and made to follow the motion calculated.
HAM

TEXTILE MILLS H

Color provides new weapon against accidents. Robt. C. Daley, Pittsburgh Plate Glass Co. *Safety Eng. 97*, 20-3, 44, 46-7 (Apr. 1949).

Principles of "color dynamics" are described which have reduced hazards, raised employee morale, and increased production in a variety of plants, including textile mills. Colors may be used as symbols to identify materials in process, safety devices, and machine parts. Their psychological characteristics may be employed to change the apparent bulk or proportions of objects or temperature of an area. Physical characteristics of colors (brilliant or dull, glaring or non-glaring, etc.) may be used to promote good housekeeping and safety, reduce eyestrain and fatigue, eliminate specific safety hazards, and minimize illumination maintenance costs. Examples of these applications are cited.

Development in the treatment of dye house wastes. S. I. Zack. *Sewage Works Eng. 20*, 129-30, 172-3 (Mar. 1949).

The waste disposal plant of the Natona Mills plant of Native Lace Works. Inc., at Dallas, Pa., is described. The treatment plant units consist of a 75,000 gallon capacity holding and equalizing tank, so that treatment can be carried out at a uniform rate of flow; one chemical feeder suitable for lime or calcium chloride; one chemical feeder for alum, copperas or ferric sulfate; chemical mixing tank having 5 min. detention; a flocculator having 40 min. detention; a 12-ft. diameter set-

tling tank, with mechanism for sludge removal, having a detention period of about 2 hrs. and an overflow rate of 665 gallons per sq. ft. per 24 hrs.; a blower and air diffusers for mixing the contents of the holding tank; constant head box for adjusting to a uniform rate the flow to the chemical mixing tank regardless of the flow from the mill to the holding tank; an elevated sludge holding tank and a plunger pump for pumping sludge from the clarifier to it. The existing pond, after enlargement by excavation, provides a surface area of 0.6 acre and about 20 days' detention. A 100 gpm pump and 2 sprays are provided for recirculating and aerating the water from the pond. The presence of black dye wastes in the wastes discharged made it necessary to use copperas and lime for coagulation most of the time. After a study of the operation of the plant, it was found that excellent results were obtained by returning sludge from the sludge holding tank to the 75,000 gal. waste holding tank, from which sludge was removed once a week. A flow chart is given; also, some data on the waste before and after treatment.

Electric power entrances and switch-boards. Jas. T. Meador. *Textile Bull. 75*, 67-9 (Mar. 1949).

The purchase of new machinery and the rearrangement of the old necessitated the building of a new electric power entrance at the Johnston Mfg. Co., Charlotte. N. C. The construction of the new entrance, which involved the cooperation of the power company, is described.

Industrial waste problems in the rayon industry. Paul W. Frisk. *Rayon & Synthetic Textiles 30*, 52-3 (June 1949).

This is a discussion of waste disposal which treats gases and fumes as well as liquid wastes which carry dissolved solids, suspended matter and soluble gases.

Modern lubrication methods. Anon. *Textile Industries 113*, 87-91 (May, 1949).

Proper lubrication will result in less power consumed, maintenance and repair costs reduced, savings in labor, accident and fire hazards reduced, production increased, and cleanliness of operations improved. Individual oiling gadgets and centralized lubrication systems are the 2 groups of modern lubricating devices for textile machinery. The trends in lubrication methods for bale breakers and pickers, cards and combers, front rolls, roving, spinning, and twisting frames, etc. are discussed.

Schneider Mills—new from the ground up. Anon. *Textile Bull. 75*, 58-60 (Feb. 1949).

The

M. W. KELLOGG COMPANY

JERSEY CITY

NEW JERSEY

The new plant of Schneider Mills, Inc., at Taylorsville, N. C., a rayon weaving plant, features modern construction and equipment throughout. A brief description of the plant and its equipment is given.

Thermosetting plastic laminates. III. Norman A. Skow, Synthane Corp. *Product Eng. 20,* 86-91 (May 1949).

Design and fabrication techniques for thermo-setting plastic laminates are discussed for various applications, including some in the textile field. Combinations of various grades of laminates in one product are discussed, and the preferred grades and combinations for toughness, smoothness, corrosion resistance, etc. are indicated. Properties of availabie forms of laminates are given, and fabrication and finishing procedures outlined. Examples of laminate uses are bobbin heads for spools, rayon cake holders, and drier poles.

"Willesden" duck: Health hazards in tent making. Industrial Hygiene Section, Dept. of Labour & Natl. Service, Australia. *Report No. 4,* 9 (1943). (Through *J. Textile Inst. 40,* A56 (1949).

An account is given of investigations into an occurrence of nasopharangeal catarrh among operatives making tentage from Willesden duck. Observations made in 8 factories coupled with the result of dust sampling in 4 of these factories indicate that the causal agent is dust liberated during the handling of the material. This dust consists mainly of cotton fibers and fiber fragments, some of which have a copper compound either combined with or adhering to them. Copper forms about 2.5% of the dust collected from the air with a Greenburg-Smith Impinger. There are indications in the literature that the copper fraction of the dust is the cause of the catarrhal symptoms. Recommendations for prevention include the provision of a particular type of industrial respirator, the avoidance of crowding machinists, together with other recommendations for working methods, and adoption of good general ventilation.

CHEMISTRY AND PHYSICS OF TEXTILE MATERIALS I

Absorption and fixation of caustic soda by mercerized cellulose. A. Breguet, R. Viatte & C. Chareyron. *Compt. rend. No. 19,* 1499-1501 (May 1949).

By determining the swelling of the fiber by centrifugation, the progressive transformation of the crystalline system of the cellulose was followed.

Action of alkalies on deaminated wool. R. Cockburn et al, The Wool Industries Res. Assn., Torridon Headingley Lane, Leed 6, England. *Biochem. J. 43,* 438-44 (1948).

The reaction of the sulfur of deaminated wool with alkalis has been studied. It has been found that, excluding the cystine destroyed during deamination, the deaminated wool behaves very similarly to untreated wool with mildly alkaline buffers at 100°; in particular lanthionine is formed. With stronger alkalies at room temperature, however, deaminated wool behaves in an entirely different manner from untreated wool and no lanthionine is formed. An examination of some of the physical properties of deaminated wool has been made which has in general confirmed earlier observations of Speakman (1936). Difficulties in reconciling the physical properties and the present chemical evidence with current views of wool structure are discussed.

Action of formaldehyde on cellulose. Anon. *Silk & Rayon 23,* 666-7 (May, 1949).

Seven possible reactions between cellulose and formaldehyde are reviewed and discussed. The effect of the amount of acid catalyst on the weight increase or decrease of the formaldehyde-treated celulose is considered and presented in table form.

Alkali stability of acetate rayon. E. Hermann. *Melliand Textilber. 30,* 145-7 (Apr. 1949).

The stability of acetate rayon towards various alkalies such as ammonia, sodium hydroxide and soda has been examined at various concentrations and temperatures. Graphs presenting the data obtained are given.

Amylases and other non-oxidative enzymes: Literature review. J. B. Sumner. *Ann. Rev. Biochem. 17,* 35-66 (1948). (Through *J. Textile Inst. 40,* A46 (1949)).

A review containing 208 references of non-oxidative enzymes (in alphabetical order) is presented, covering research papers appearing between Dec. 1, 1946, and Dec. 1, 1947. A few papers published in European journals from 1940 to 1946 have been included.

Applications for alkyds and polyesters. E. M. Beavers. *Ind. Eng. Chemistry 41,* 738-40 (Apr. 1949).

Ester resins are used in large quantities for a multitude of applications. Properties and performance can be adjusted over broad ranges, depending on the choice of raw materials used in the

manufacture of the products. The majority of the present applications are in the general field of protective and decorative coatings. Linear polyesters, particularly, show potentialities also as elastomers, fibers, lubricants and molding powders.

Average DP of high polymers; methods of calculating and representing their DP. G. Beauvalet & P. Clement. *Bull. Soc. Chim. de France*, D1-14 (Mar. 1949).

A mathematical approach is presented for the determination of the degree of polymerization of high polymers and the distribution of the macromolecule. The fractionation method of determining the distribution is used to verify the theory.

Chemistry of detergency. I. J. Gruntfest & E. M. Young. *J. Am. Oil Chemists' Soc. 26*, 236-8 (May, 1949).

Three types of experiments are described which can be used to explain washing on a chemical and mechanical basis.

Comparative physical investigations of real silks and rayons. W. Rauch. *Melliand Textilber. 29*, 185-90 (June 1948); *in German.*

Results of electric and elastic measurements and of sorption and radiation tests performed with various types of real silk and rayon are reported. Measurements executed on real silk and perlon yield conductivity values of the same order, while on the contrary the module of elasticity and the absorption of moisture reveal wide differences. Quantitative differences are also manifested in the extent of damage done to fibers by exposure to ultraviolet rays.

Decrease of alkali solubility of wool by introduction of new cross linkages into wool keratin. W. Kirst. *Melliand Textilber. 29*, 236-40 (July 1948); *in German.*

Resistance of wool to the action of alkali can be enhanced by treatment with dihalogen compounds with interchangeable halogen atoms, even without previous reduction of cystine groups as proposed by Harris. The same result can be obtained by action of di- or polyethyleneimine derivatives on wool fiber without previous reduction.

Degradation of cotton during atmospheric exposure, particularly in industrial regions. E. Race. *J. Soc. Dyers Colourists 65*, 56-63 (Feb. 1949).

The effects of air and atmospheric moisture on the degradation of cotton are discussed. In the tests reported, it was found that the loss of break-

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ing strength of yarn exposed in an industrial region was greater during the winter months than during the summer months. Greater atmospheric acidity in industrial regions in winter is due to increased fuel consumption and fog.

Degradation by exposure. Anon. *Silk & Rayon 23*, 672, 674 (May, 1949).

Data on the degradation of cellulose due to the sunlight and atmospheric oxygen is presented in graphical and tabular form.

Degree of lateral order in various rayons as deduced from x-ray measurements. P. H. Hermans. *J. Polymer Sci. 6*, 145-51 (Apr. 1949).

X-ray measurements on 16 different specimens of regenerated cellulose reveals that there exists a pronounced negative correlation between the integrated intensity of the 101 interference and its half-width. The 101 plane is a preferred cleavage plane and represents the lamellar plane of the ribbon-shaped crystallites. Variations in the intensity of the other interferences are much less or non-existent.

Diminution of swelling capacity of regenerated cellulose hydrate fibers by drying processes at normal and unusually high temperatures. A. Feubel & F. Hilgers. *Melliand Textilber. 29*, 233-35 (July 1948) ; *in German.*

The object of this investigation was to obtain knowledge of the processes which occur in cellulose hydrate fibers when these are dried at ordinary and extremely high temperatures. It was observed that uneven drying results in differences of density over considerable lengths of the yarn, particularly in the case of cuprammonium yarn, and later in unlevel dyeings. Slight differences in density of viscose were descerned by staining prior to microscopic examination. This procedure rendered it possible to follow the process at a very high temperature. A systematic time study indicated the method which was to be pursued for the production of a durable swellproof type of so-called "high temperature cellulose."

Fractionation of a cellulose xanthate derivative. P. C. Scherer & R. W. Phillips. *Rayon & Synthetic Textiles 30*, 45-6 53-4 (May, 1949).

A report on work performed in an attempt to fractionate cellulose xanthate so each fractionation would have the same degree of substitution and to determine the degrees of substitution of the fractions obtained.

Improved technique for measurement of the dispersing powers of detergents. Foster D. Snell & Irving Reich. *J. Soc. Chem. Industry 68*, 98-100 (Mar. 1949).

A method for measuring dispersing power previously described has been made simpler and less time-consuming. The present method calls for agitating a light-oiled umber soil with detergent solution, permitting to stand in a Nessler tuber for 2 hrs., the pipetting off a sample of the suspension, and determining its turbidity in a modified electric turbidimeter. Typical dispersing power values for various types of detergents are listed.

Influence of the fine structure on the properties of cellulose hydrate fibers. Egon Elod. *Textil-Rundschau 4*, 117-26 (Apr. 1949).

This is a report on a method of determining the swelling of natural and artificial fibers. The method involves the topochemical acetylation of the fibers and subsequent peeling of the outer layers. Graphs are presented illustrating the change in the degree of swelling when the acetylation period and the percent of dissolved fiber vary.

Investigation of the dynamic elastic properties of some high polymers. K. W. Hillier & H. Kolsky. *Proc. Phys. Soc. 62B*, 111-21 (Feb. 1949).

Measurements of the dynamic elasticity and damping factors of filaments of polythene, neoprene and nylon have been obtained, and the correlation of these results with the molecular re-arrangements which take place during stretching is discussed.

Mechanism of set and supercontraction in wool fibers. S. Blackburn & H. Lindley. *J. Soc. Dyers Colourists 64*, 305-12, 313-14 (Sept. 1948).

Included in this report are: the nature of the chemical reactions which take place on boiling wool in alkaline buffers; investigation of the setting and supercontraction of wool fibers; and effect of esterification of the carboxyl groups of wool on supercontraction in sodium bisulfite and set in aqueous media.

Molecular structure and the physical properties of polymers. C. W. Bunn, Imperial Chemical Industries. *Research 1*, 630-40 (Nov. 1948).

Crystalline and non-crystalline polymers, the melting points of chain polymers, and the molecular basis of rubber-like properties are discussed. The characteristics which make fibers suitable for textile purposes are listed. It is predicted that the theoretical concepts of polymer structure will lead to more quantitative estimates of properties such as the flexibility of the molecule and that the

properties of a polymer will be correlated with variations in molecular texture due to the conditions of synthesis and fabrication.

Partial acetylation of cotton celulose by ketene. Carl Hamalainen & J. David Reid, Southern Regional Res. Lab. *Ind. Eng. Chemistry 41,* 1018-21 (May 1949).

Ketene was successfully used to acetylate linters and cotton sewing thread which had been preswollen with water or acetic acid. After preswelling, the excess water was removed by extraction, the cotton suspended in an inert solvent containing a catalyst, and gaseous ketene passed in. The preferred solvent was ether and the best catalyst perchloric acid. Samples up to 17% acetyl content retained their fibrous structure and lost only 12% of their strength, but degradation was serious with higher acetylations (up to 39%) and without gaseous ketene and no solvent. A dark color formed by ketene polymerization could be removed with hot alcohol. Most experiments were with water-activated, solvent-dehydrated cellulose; in runs with acetic acid as swelling agent, acetylation probably was due to acetic anhydride formed. Textile applications of the product probably depend on its resistance to microbiological attack.

Passage of materials through wood, paper, cellulosic membranes and fabrics. A. J. Stamm. *Tappi 32,* 193-203 (May, 1949).

The subject of permeability is subdivided according to the type of motivating force and operative conditions. Different means of obtaining and analyzing data under each of the different conditions are given for the different types of cellulosic materials and general conclusions are drawn.

PRINCIPLES OF HIGH-POLYMER THEORY AND PRACTICE. Alois X. Schmidt & Chas. A. Marlies. New York, McGraw-Hill, 1948. 743 p.; Price: $7.50.

The contents of the book may be judged from the chapter headings: 1. Introductory Definitions and Concepts; 2. Molecular Forces; 3. Some Special Behaviors and Properties of High Polymers; 4. Polymer Formation and Modification; 5. Structures of High Polymers; 6. Solubility and Molecular Weight Relations; 7. Rheology; 8. Molding and Manipulation; 9. Mechanical Properties; 10. Electrical, Thermal, and Optical Properties; 11. Fibers and Fibrous Products; 12 and 13. Rubbers; 14. Surface Coatings; 15. Adhesive; 16. Resin Product Development. The book also includes an appendix section on high-polymer literature; properties of various fibers, plastics, and rubbers; adhesion, compatibility, and solubility of sundry materials of interest; and a table of chemical formulas and trade names of high polymers. The combined author and subject index covers 28 pages . . . The book should prove well suited as a text for a good course in high-polymer principles, as well as a stimulating and valuable reference on the shelf of persons interested in high polymers.—*Science.*

Principles of detergency and their application in textile processing. Anthony M. Schwartz. *J. Am. Oil Chemists' Soc. 26,* 212-5 (May, 1949).

A presentation of an outline for the analysis of the detersive process of detergents from the physico-chemical point of view and an illustration of how this outline may be used as a guide to solving practical problems of detergency in the textile processing industry.

Reactions of organic polymers in the solid state. Therese P. & Marcel Mathieu. *Bull. Soc. Chim. de France,* D43-8 (Mar. 1949).

In the first part of the article the methods which permit a study of the reactions of organic polymers such as cellulose and nylon in the solid state are discussed. In the second part examples of the applications of these methods to certain reactions are given.

Study of the peptides of cystine in partial acid hydrolysis of wool. R. Consden & A. H. Gordon. *Biochem. J. 43,* X-XI (1948).

A brief communication is given on the subject study.

Swelling and shrinkage of artificial cellulosic textiles (fibers, yarn, and cloth). Conference held at the Congress of Industrial Chemistry 1947. F. Girard, Directeur du Lab. de Controle Textile au Comptoir des Textiles Artificiels. *Bull. de L'Institut Textile No. 9,* 37-52 (Feb. 1949).

The swelling of fibers and yarn of rayons, cotton, cellulose ethers, materials treated with formol, and rayon fibers in which the cellulose had been recrystallized was measured volumerically, diametrically and longitudinally. The volumetric swelling was found to be the sum of the diametric and the longitudinal swelling. The diametric swelling may be as much as 40%; the swelling in length seldoms exceeds 5%. Waterproofing and shrinkproofing treatments reduce this swelling to ½ or ¼ these amounts. On drying, elementary fibers return to about the same dimensions as before wetting. Yarns swell transversely but shrink by longitudinally when wetted with water. This shrinkage is caused by the transverse swelling and by the twist. On drying at low tensions the yarns

contract about as much as on wetting. They therefre tend to assume, in the course of the first wetting, a quasi-permanent deformation which remains the same or becomes progressively more pronounced on successive washings and dryings, if the tension is low. The stretching of the fibers which takes place in carding and spinning may have some effect on yarn shrinkage, but it is probably comparatively small.

Swelling and shrinkage of artificial cellulosic textiles. 2nd part. F. Girard. *Bull. de L'Institut Textile No. 11,* 35-55 (Apr. 1949). See preceding abstract for 1st part.

Rayon fabrics shrink only 5% or less when wetted, except when they have been stretched or twisted very much. Rayon staple fabric always shrinks on wetting. This may be 10-15% in the warp and depends upon the shrinkage of the yarn itself and upon the contraction of the warp. Materials which become boardy when wet show a marimum shrinkage. In closely woven fabrics, swelling and shrinkage are counteracted partially by the reciprocal blocking of the swllen yarns. They take place slowly only on repeated washing. This blocking of the yarns causes mechanical stress which degrades the yarn. The problem of producing an unshrinkable material is reduced, therefore, to finding a fiber which undergoes only a very small transverse swelling when wetted.

Thermal degradation of polystyrene and polyethylene. H. H. G. Jellinek. *J. Polymer Sci. 4,* 13-36 (1949).

This is a detailed elucidation of the formation of the monomer produced from the degradation of polystyrene and an investigation at high temperatures at which this reaction is predominant. An apparatus which allows the production of monomer to be followed continuously was constructed. A discussion of the experimental results,and an attempt to outline the mechanism of degradation for this range of temperatures are given.

Thermodynamics of crystallization in high polymers. Paul J. Flory. *J. Chem. Physics 17,* 223-40 (Mar. 1949).

The configurational entropy of a mixture of solvent and polymer molecules composed of segments connected by flexible bonds has been derived for the case in which the lattice they occupy contains limited regions of perfect order which are reserved for occupancy by polymer segments exclusively. Although the derivation is carried out primarily for polymer chains of uniform length, modifications required for the treatment of heterogeneous polymers are included. An expression for the free energy of fusion, of the semicrystalline mixture of polymer and solvent is de-

rived assuming a van Laar heat of mixing term.

Viscosity of Newtonian, pseudoplastic, and dilatant liquids. J. G. Krieble & John C. Whitwell. *Textile Research J. 19,* 253-8 (May, 1949).

This is a discussion of the use of viscosity in the measurement of the D.P. of high polymers. Mathematical.

Water-soluble gums—their botany, sources and utilization. C. L. Mantell. *Econ. Botany 3,* 3-31 (Jan.-Mar. 1949).

Arabic, tragacanth, ghatti, karaya and other commercially valuable gums are exudations of a variety of trees and shrubs in many parts of the world. Their hydrophilic and other properties render them useful in the adhesives, beverage, cosmetic, paint, paper-making, pharmaceutical, textile and other industries.

TEXTILE EDUCATION AND RESEARCH J

Design of research in textiles and clothing. Hazel M. Fletcher. *J. Home Econ. 41,* 256-8 (May 1948).

This is a discussion of factors involved in planning research projects.

Research aimed at reducing neps. Anon. *Textile Bull. 75,* 48, 50 (Feb. 1949).

The objective of a research project underway at the School of Textiles at North Carolina State College is the reduction of the number of neps in cotton fabric. Supported by a grant of $60,000 under the Research and Marketing Act of 1946, the project is to run for 3-4 years. A nep-counting template has been developed and application for a patent on it is to be made. The device is a piece of steel, 5¼ in. x 10 in., in which have been cut 10 round holes of 1 sq. in. in area. This template, which has a black velvet background, is superimposed upon the cotton web as it comes out of the carding machine. Tests run time after time have revealed that by counting the neps that are revealed through the round holes the researcher can calculate quickly and accurately the number of neps in the entire web.

U. S. Rubber to build textile research laboratory. *Rayon & Synthetic Tertiles 30,* 34 (May, 1949).

United States Rubber Co. will build a new $250,-000 laboratory for textile research and development at Winnsboro, S. C. Rayon tire cord was pioneered largely by United States Rubber Co. The rayon construction greatly improves the service of synthetic truck tires, and is finding increased use in some passenger tires.